



COLONY OF MAURITIUS

Annual Report
OF THE
Department of Agriculture
for the year 1958

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PRINTED AND PUBLISHED BY
J. ELIEL FÉLIX, I.S.O., GOVERNMENT PRINTER,
PORT LOUIS, MAURITIUS
OCTOBER 1959

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ERRATA

Paragraph 14 : *2nd line please read "opened up" instead of
"open up to"*

Paragraph 138 : *3rd line please read "Fowl Pox" instead of
"Fowl Fox"*

Paragraph 170 : *2nd line please read "Contour mapping" instead
of "Colour mapping"*

Paragraph 229 : *3rd line please read "M.M.V.P." instead of
"M.N.V.P."*

Paragraph 348 : *4th line please read "followers" instead of
"fallowers"*

Department of Agriculture,
Réduit,
30th May, 1959.

Sir,

I have the honour to submit the Annual Report of the Department of Agriculture for the year 1958.

I have the honour to be,

Sir,

Your obedient servant,

M. N. LUCIE-SMITH,
Director of Agriculture.

THE HONOURABLE THE MINISTER OF AGRICULTURE AND NATURAL RESOURCES,
Ministry of Agriculture and Natural Resources,
Port Louis.

Table of Contents

	PAGE
I. General Review	1
II. Boards and Committees	6
III. Board of Agriculture, Fisheries and Natural Resources	7
IV. Mauritius Chamber of Agriculture	7
V. Comité de Collaboration Agricole Maurice— Réunion—Madagascar	7
VI. College of Agriculture	8
VII. Central Board	10
VIII. Mauritius Sugar Industry Research Institute ...	11
IX. Sugar Industry	12
X. Tea Industry	14
XI. Fibre Industry	18
XII. Tobacco Industry	19
XIII. Food Crops	22
XIV. Livestock	23
XV. Land Settlement	25
XVI. Extension Services	27
XVII. Experiment Stations	30
XVIII. Plant Pathology	38
XIX. Entomology	40
XX. Agricultural Chemistry	42
XXI. Agricultural Engineering	43
XXII. Fisheries	45
XXIII. Rodrigues	45
XXIV. Lesser Dependencies	48
XXV. General	49

APPENDICES

A. Staff	51
B. Composition of Principal Boards and Committees	55
C. Legislation	57
D. Publications	57
E. Manufacturing Accounts, Livestock Feed Factory and Yeast Factory	58-64
F. Conversion Table	AT END

Annual Report of the Department of Agriculture for the year 1958

I. General Review

There was no major change during 1958 in the policy of the Department of Agriculture. This remains the attainment of maximum utilization of all the soil, water and livestock resources of the Colony to the best advantage of the people of Mauritius. The Department of Agriculture plans its experimental, development and extension work in line with the above policy in fulfilment of the task assigned to it by the Ministry of Agriculture and Natural Resources. To discharge these functions, the Department is organised into 12 divisions employing 268 officers, including a Director and two Deputy Directors.

2. One of the primary objectives is the provision and maintenance of an adequate cadre of trained staff within the Department. Although training of specialist staff is usually completed overseas, nearly all the professional and technical officers of the Department are initially provided from the College of Agriculture which functions as a division of the Department of Agriculture. In order to meet the greater demand for trained personnel, not only in the Department but in industry, the College was enlarged in 1955 and the scheme of studies reviewed. Agricultural and technological progress in the last few years has been so rapid that it has again been found necessary to modify the course of studies the better to meet the current requirements, not only of the Department itself, but also of the Sugar Industry Research Institute, the sugar industry and the other agricultural industries of Mauritius. To that end, a 'Reorganisation Committee' was appointed in December 1957. Completely new schemes of studies have been prepared which will transform the present combined agriculture and sugar technology diploma course into two courses, one in general agriculture, the other in sugar technology. By the end of the year, the Committee's Report which, with minor modifications, had been accepted by the Advisory Board of the College and by the Chamber of Agriculture, was under examination in the Ministry of Agriculture.

3. There was comparatively less shortage of professionally qualified staff within the Department during 1958 than in recent years. More senior officers, however, were on leave for some part of the year, this being a temporary effect of the first year of operation of the reduced tour of duty under the new conditions of service introduced as from the 1st January. By the close of the year, the staff position had improved and the Secretary of State had selected an officer to fill, early in 1959, the second post of Deputy Director which has been vacant for two years.

4. The second major objective of policy is the provision of an Extension Service to translate into general agricultural practice the information obtained from the experimental centres and to bring to the farmer all available technical assistance and advice.

5. Associated with the above objective is the development of experimental stations in each of the principal climatic zones of the Island for the purpose of investigation of crops, livestock and methods best suited to each particular area.

6. As the sugar industry is the main source of wealth in Mauritius, the Department encourages its development within the scope of the Ministry's general policy. To that effect, the Department of Agriculture works in close cooperation with the Sugar Industry Research Institute and other allied organizations. The Department undertakes extension work in regard to all small surgarcane planters, having as one of its principal aims the raising of small planters' yields to a figure more comparable with that of the estates. The Department also maintains a plant inspection service to prevent the introduction of new pests and diseases, controls the Cane Quarantine Station and administers the Central Cane Arbitration Board.

7. The development of other agricultural industries, in particular tea, tobacco, foodcrops and fibre, has long been a major item of policy. Encouragement of local production of milk and meat within the limits imposed by the restricted availability of land for fodder is an item of policy which is implemented in several ways, the chief of which are the introduction of new fodder species and the development of grass, the improvement of the milk breed of cattle characteristic of Mauritius, the introduction of improved beef-type Zebu cattle for upgrading local stock, the maintenance of an island-wide artificial insemination service, the popularization of poultry, the compounding of stock feed mixtures and the investigation and development of fresh water fish production.

8. As delineated in the subsequent sections of this report, the development programme of the Department made substantial progress during the year. The revision of the programme, begun at the end of 1957, was finalised in the first part of 1958. Before the end of the year, however, there was to be yet another revision, limited to costs, necessitated by Government's decision to introduce new scales of wages and conditions of service for all personnel hitherto paid under "Other Charges".

9. The above coincided with substantial structural alterations made between March and June to head office buildings which had long become inadequate for the increased administrative duties of the Department. In order to house the Finance Division, the Resident Auditor, the Confidential Assistant, and to provide a conference room and accommodation for departmental records, the Chemistry, Plant Pathology and Veterinary laboratories had to be vacated. These were all transferred to the building formerly occupied by the Mauritius Sugar Industry Research Institute, which itself moved to new premises. Shortage of clerical officers, acute throughout the year, was particularly severe at that time owing to the larger development commitments and increased activities, putting a very heavy burden on the rest of the staff which was working extra hours every day under difficult conditions.

10. Looming large in the Department's development programme is the expansion of the tea industry on a scale to provide a significant contribution to both exports and employment. In the course of the year a major part of the overall project was begun and made rapid progress, namely the construction of the Government tea factory in the Midlands area. The factory, appropriately called the "Chartreuse Tea Factory" after a nearby plot of

Crown Land had reached an advanced stage of construction by the end of the year. Concurrently, a new main road constructed by the Public Works Department and intended to connect the Piton du Milieu and Midlands areas and give access to the Grand Port District by by-passing the populated centre of Curepipe, was taken as far as the factory. The factory is being constructed in fulfilment of part of an agreement concluded between the Government of Mauritius and the Nuwara Eliya Tea Estates Company Limited, a sterling company with long experience in tea production and marketing. The new company, which also holds a 5-year option on a long-term leasehold of Government's Midlands Tea Estates and adjoining undeveloped Crown Lands, began its operations in March.

11. In field development, the year closed with some 1,350 acres of new land cleared for tea, of which over 1,000 acres had been planted with improved varieties.

12. Not less in importance, looking to the future, is the basis on which the field Extension Services of the Department are being built up in the main endeavour to raise the standards of peasant agriculture. With only a few exceptions, the field staffs of the Extension Services have been up to strength throughout the year. Between them, officers of these services paid some 16,000 visits to small planters, milk producers and other stock owners.

13. Pride of place in peasant agricultural development may, perhaps, be given this year to the creation in the Black River District of a large cane farm solely for the production of disease-free planting material of new improved varieties for the exclusive use of small planters who would not otherwise be able to secure good planting material treated against ratoon stunting and chlorotic streak diseases. This scheme, which is under the general management of the Senior Agricultural Officer (Extension), is financed by the Sugar Planters' Rehabilitation Fund. By the end of the year, 325 acres of land had been purchased and 25 acres had been planted with treated cuttings of the new varieties.

14. The Crop Extension Service, which is concerned with food crop production as well as the pilot settlement and allotments schemes, open up to 100 acres of scrub and rocky land at Palmar, cleared 200 acres at Bee Manique for allotment purposes and allocated 13 acres at The Vale. About 150 acres of idle scrub land forming part of the Plaisance Airport lands were also cleared for allotment purposes and for the production of foodcrops. It is estimated that foodcrops were cultivated on an area of 1,400 acres over and above the area of 7,600 acres planted in 1957, with an estimated increase in production of 17,000 tons or an overall production estimated at 56,000 tons.

15. The first of the district agricultural centres to be established under the Capital Expenditure Programme was formally inaugurated on the 5th May by the Minister of Agriculture and Lands. At this centre, as well as the others that are planned, accommodation has also been provided for the district staff of the Livestock Division. Model cowshed, pigsties and poultry runs will also be erected in the near future.

16. In regard to the milk cattle, the artificial insemination and veterinary services provided by the Livestock Division were maintained. The Division's principal contributions during the year, in addition to its numerous routine activities, were successful control of the first recorded outbreak of Swine Fever in the Colony and marked progress in the control of bovine tuberculosis in herd cattle.

17. The Department's aim is not merely the control of bovine tuberculosis, but its eradication. It is necessary as a first step, because they are the most diseased, to deal with the herd and the draught cattle. The latter, however, have of late years greatly diminished in numbers owing to the development of mechanical transport. In consequence, the main effort was directed to the herd cattle on which 2,239 tuberculin tests were performed during the year. 976 tests were carried out on dairy cattle. All reactors, 7 and 2 per cent respectively, were sent to slaughter, the owners of the cattle cooperating most willingly in the campaign.

18. The development of poultry-keeping into a minor industry of some importance has occupied the attention of the Department throughout the year. Day-old White Leghorn chicks were received from Australia in May. In August, a number of Rhode Island Reds, New Hampshires and Australorps were also brought in. Feeding trials were carried out, in cooperation, by the Livestock and Agricultural Divisions and the preparation of plans for an enlarged poultry development scheme to be sited at the Central Experiment Station, Réduit was begun. The object of this scheme, which may be extended to include a pilot broiler production unit, is to supply good quality hatching eggs and chicks to poultry keepers in replacement of the day-old chicks now imported mostly by air at considerable cost and drain of currency and with the attendant risk of introduction of disease.

19. The Livestock Division continued to be responsible for advisory work on matters relating to animal breeding and nutrition. The development of the Creole dairy herd at Curepipe proceeded in line with the approved policy of improvement within the breed. As regards beef, enquiries were initiated overseas, more particularly in Pakistan and in consultation with the specialists officers of the Food and Agriculture Organisation of the United Nations at Rome, about suitable breeds on which breeding for local beef should be based. By the end of the year, this matter was still under examination in consultation with the Stock Breeders' Association. A Danish type piggery for the production of pedigree stock at the Curepipe Breeding Station for sale to pig breeders was reaching completion at the end of the year.

20. In regard to feeding problems the Livestock Feed Factory (hitherto known as the "Maize Mill") continued the preparation of special mixtures for poultry, dairy cows, pigs and other livestock. Production amounted to 1,018 tons as compared with 968 tons in 1957. The special shop run by the Department for the sale of part of this production operated throughout the year at Rose Hill.

21. The experimental stations of the department completed their scheduled development, so that towards the end of the year attention could be more strongly focussed on the research work proper. By the end of the year, Richelieu Experiment Station had fifty acres of arable, irrigated land, laid out on the contour. At Curepipe Experiment Station an additional 11 acres had been cleared for cultivation, while work had commenced on the clearing of a further 10 acres for fruit crops, fish ponds and grass production. At Barkly Experiment Station a further extension of the station by 10-11 acres was contemplated in order to meet the ever increasing demand for seeds of selected and acclimatised vegetables. The increased interest of the public in this aspect of the Department's work is reflected in the revenue from the sale of economic plants and vegetable seeds which showed an increase over two years ago of 10,000 rupees. Orchard work proceeded at most stations, more particularly at Richelieu, where 4 acres were put under various varieties of mango. Work on citrus continued on the same lines as in the previous year,

22. A number of investigations, more fully described later in this report, were carried out on tobacco both at Richelieu and at Pamplemousses Experiment Stations. Unfortunately, cyclonic weather in March and April seriously interfered with the work, much of which will have to be repeated. Useful information has nevertheless been obtained, especially in connection with the control of nematodes. Experiments have also shown that the use of cloth covers, hitherto a feature of tobacco nursery work here, can be abandoned in favour of a surface mulch of fine manure with a consequent appreciable saving in cost of material and labour.

23. Particular attention was paid during the year to the incidence of diseases of tobacco. As a result of this work, "frog eye" has emerged as one of the major diseases of tobacco in Mauritius. Damage hitherto attributed to *Alternaria* brown spot appeared to have, in fact, been caused by frog eye. Methods of control adapted to local conditions were worked out and brought to the attention of the Inspectors of the Tobacco Board and, through them, to that of all the tobacco growers.

24. As regards pests, the fruit flies continued to be very troublesome. A new fly species, *Pardalaspis cyanescens*, was recorded in October as seriously affecting the tomato crop. This pest has probably been introduced accidentally from Reunion or Madagascar, where it has existed for many years. While every effort is made to guard against the introduction of pests and diseases, accidental introductions must be considered as inevitable from time to time notwithstanding the legislation in force and the vigilance kept under the powers granted by law. A natural parasite of this fruit fly exists in Mauritius, but does not seem to be very active. In consequence, large parasite introductions were made from Hawaii, no fewer than 56,000 adults of four species being liberated during the year in various localities. Field counts will later be made to determine the extent of establishment and adaptation of these parasites.

25. No serious pests were recorded on tea. In Diego Garcia, the Rhinoceros Beetle is causing extremely severe damage to the coconut groves. The island was visited by the Assistant Entomologist in October in order to assess damage and make recommendations. Following this investigation, preliminary work on the introduction of certain parasites, as part of the control measures to be adopted, was begun immediately. An attempt, sponsored by the Commonwealth Development and Welfare Fund, was made during the year by a visiting entomologist to study the possibility of controlling the ordinary biting fly, *Stomoxys nigra*. Hopes are not high of the results being encouraging.

26. Experimental studies on fish farming problems continued both at the upland and low altitude experiment stations. Interesting findings of local application have been prepared for publication and, when all the necessary data are finally assembled, an assessment will be made of the probable economics of fish in farming production under varying local conditions.

27. The final revision of the land utilisation map, based on an aerial survey carried out some years ago, was completed and, by the end of the year, the first hand-coloured copy of the map was almost ready. The amount of revision required has been greater than anticipated owing to the rapid development of marginal lands, made possible after the war by the introduction of heavy mechanical equipment.

28. In Rodrigues, the Department has under the Capital Expenditure Programme, a major rehabilitation project covering the whole of the Dependency. By the end of the year, nearly 700 unit farms of 2 acres each had been terraced and contour cultivated on the 'tie-ridge' system; four of the six scheduled cattle breeding centres had been established housing to date 48 cows of the Creole milk breed introduced from Mauritius; 70 acres of land had been put under fodder species and 50 acres, out of a target of 80 acres, had been placed under irrigated rice; 300 acres of steep slopes and ridges in the Cattle Walk out of the 440 planned had been put under protective forestry, while in the uplands 450 acres out of 600 had been likewise safeguarded. Some difficulties, such as the effective control of "Chiendent" grass on the unit farms, involving greatly increased costs, have become apparent. In spite of all difficulties, however, the overall progress made during the year was very satisfactory and is changing the whole aspect of Rodrigues.

29. The policy of close collaboration with the neighbouring territories of Reunion and Madagascar has been maintained under the auspices of the *Comité de Collaboration Agricole Maurice—Réunion—Madagascar*. The 1958 annual general meeting was held in Mauritius. Co-operation of this nature is vital to Mauritius in view of the necessity of mutually agreed action to prevent the spread of Fiji disease of sugar-cane to Mauritius and to continue the testing of new varieties for resistance to the disease. Collaboration has also been useful in many other directions.

II. Boards and Committees

30. Departmental officers served on the following boards and committees :-

- Agricultural College Advisory Board*
- Agricultural College Reorganisation Committee*
- Board of Agriculture, Fisheries and Natural Resources*
- Board of Examiners of the College of Agriculture*
- Board of Examiners for the Registration of Agricultural Chemists*
- Cane Release Committee
- Comité de Collaboration Agricole Maurice—Réunion—Madagascar*
- Customs Tariff Advisory Board
- Cyclone and Drought Insurance Board
- Irrigation Committee
- Land Acquisition Board
- Land Settlement Committee†
- Mauritius Sugar Industry Research Institute Board
- Mauritius Sugar Industry Research Advisory Committee
- Sack Factory Board
- Sugar Industry Rehabilitation Fund Committee†
- Sugar Industry Reserve Fund Committee
- Sugar Millers' Rehabilitation Fund Committee†
- Sugar Planters' Rehabilitation Fund Committee†
- Tea Committee*
- Tobacco Board*

*The Director of Agriculture as Chairman.

†A Departmental Officer as Chairman

III. Board of Agriculture, Fisheries and Natural Resources

31. The Board, functioning under an amending and consolidating ordinance (No. 29 of 1957), held its first meeting on the 28th May. It held 3 other meetings during the year. The following committees were set up under the Board for specific purposes :—Fisheries Committee, Irrigation Committee, Land Settlement Committee, Cane Release Committee.

32. The principal matters considered by the Board in the course of the year included :—

- (a) The possibilities of developing oyster culture ;
- (b) The lease of Flat Island ;
- (c) The effects of deforestation on water conservation ;
- (d) The control of soil erosion ;
- (e) The assessment of the rental values of Crown Lands for farming purposes.

IV. Mauritius Chamber of Agriculture

33. The Mauritius Chamber of Agriculture continued its functions as the authoritative organisation representing the agricultural community of the Colony both in Mauritius and in London. Delegates of the Chamber sat on many statutory committees and boards concerned with agricultural activities in the Colony. The work of the Chamber is fully reported in the Annual Report of the President for the year 1957–58.

V. Comité de Collaboration Agricole Maurice—Reunion—Madagascar

34. During the year the Committee operated under the Chairmanship of the Director of Agriculture in Mauritius, with the Inspector-General of Agriculture in Madagascar and the Director of Agriculture in Reunion as Vice-Chairmen.

35. The work of the Committee consisted mainly in the interchange of information on problems of mutual interests and exchange visits of agricultural experts.

36. Among a comparatively large number of visits sponsored by the Committee in the three territories, the following were of special interests from the Mauritius point of view :—

- (a) Visit of Messrs. Antoine, Bechet and Orioux, plant pathologists of Mauritius, to study Fiji disease in Madagascar and to visit the disinsectisation plant at Tamatave ;
- (b) Visit of lecturers and students of the Reunion College of Agriculture to Mauritius ;
- (c) Visit of lecturers and students of the Mauritius College of Agriculture to Reunion ;
- (d) Visit of Mr. Suzor of the Agricultural Division of the Department of Agriculture to Reunion to study the tobacco industry.

37. The annual conference was held in Mauritius at the end of October. The delegations from Reunion and Madagascar where shown the various research stations of the Department of Agriculture and of the Sugar Industry Research Institute, a number of operating sugar factories, tea factories and plantations, rock moving equipment at work in sugarcane fields, trials in overhead irrigation compared with surface irrigation and the various aspects of the local tobacco industry.

38. The programme of work for 1959 was prepared during the Conference. It includes the following items which are of special interests to Mauritius :—

- (a) Study of the possibility of developing an inter-island trade with Mauritius in seed potatoes ;
- (b) Visit of College of Agriculture staff and students to Madagascar ;
- (c) Search in Madagascar for parasites of the Tomato Fly, *Pardalaspis cyanescens* ;
- (d) Details of control of pests of economic crops in Reunion ;
- (e) Trial of cane varieties in Madagascar for resistance to Fiji disease.

39. The costs of the operations of the Mauritius branch have been met by a grant from the Sugar Industry Reserve Fund.

VI. College of Agriculture

TEACHING

40. The College of Agriculture continued to offer a three-year course leading to the diploma in Agriculture, an eighteen months course for the Certificate in Sugar Analysis and a one-year course for the Certificate in Tropical Agriculture and Cane Cultivation.

41. The lecturer in Sugar Technology and Engineering resigned at the beginning of the year. The vacancy could not be filled permanently during the year, as no suitable candidate could be found for appointment, and the lectures in Sugar Technology and Engineering were delivered by officers of the Department. The teaching of other applied subjects was undertaken by part-time lecturers, mainly officers of the Department and the Sugar Industry Research Institute. The London University B. Sc. Examinations (External) in Practical Physics were held at the College.

ENTRANCE EXAMINATIONS AND SCHOLARSHIPS

42. 19 candidates sat the entrance examinations for the Diploma Course. Of these, 12 satisfied the examiners and were admitted. 14 candidates were admitted to the Cane Cultivation Course, 5 to the Tropical Agriculture Course and 7 to the Sugar Analysis Course.

STUDENT BODY

43 The number and distribution of students is tabulated below :—

Course	No. of Students		
	1958	1957	1956
Diploma	47	59	52
Tropical Agriculture and Cane Cultivation	16	22	25
Sugar Analysis	5	7	7
Part-time	3	7	8
TOTAL	71	95	92

44. Attendance at the Sugar Analysis Course, which was started in 1954 with the object of training personnel for sugar estate laboratories and the Central Board, continued to be poor. This course was to have been abandoned; but it has been decided to maintain it for a further trial period whilst lowering somewhat the qualifications required for admission.

EXAMINATION RESULTS AND LAUREATESHIPS

45. The results of the annual examinations held in April were as follows :—

	1958		1957	
	Sat	Passed	Sat	Passed
1st Year—Diploma Course	23	19	26	18
2nd Year—Diploma Course	18	17	14	13
3rd Year—Diploma Course	17	17	10	8
Certificate in Tropical Agriculture and Cane Cultivation ...	21	16	22	14
Certificate in Sugar Analysis	6	5	3	2

46. Of the four failures in the 1st Year examinations, one is repeating the 1st Year course while the three others left the College of their own accord. The only candidate who failed the 2nd. Year examinations also left of his own accord. All 3rd. Year candidates passed their examinations, two of them qualifying for the honours diploma. The candidate who ranked first was awarded a laureateship for studies in sugar engineering at the Louisiana State University, U.S.A.

EXAMINATION IN SUGAR MANUFACTURE OF THE CITY AND GUILDS OF LONDON INSTITUTE

47. This examination was taken in May by 13 diplomates of the College and one private student, with results as under :—

	1958	1957
No. of candidates	14	10
No. passed	14	8
First Class Honours	8	7
Second Class Honours	6	1

48. A College diplomate was awarded the Silver Medal of the Institute on the results of this examination.

VISITS OF STUDENTS TO REUNION AND MADAGASCAR

49. Under the auspices of the *Comité de Collaboration Agricole*, a party of six 3rd. Year diploma students, accompanied by the Principal and the Assistant Lecturer in Biology, visited Reunion during the August vacations. They stayed one week as the guests of the *Services Agricoles* of Reunion and made a tour of the main agricultural activities in the island.

PRIZE-GIVING

50. The College was honoured by the presence of His Excellency the Governor and the Minister of Agriculture and Lands at the annual prize-giving held on the 26th June. His Excellency presented the prizes and diplomas. An account of the proceedings, including the speeches of the Minister of Agriculture, the Acting Director of Agriculture and the Acting Principal of the College, was published in the July—August number of the *Revue Agricole et Sucrière de l'Île Maurice*.

VII. Central Board

51. The Central Board operates under the Sale of Cane (Control) Ordinance. The executive machinery of the Board is run as a division of the Department of Agriculture.

MEETINGS OF THE BOARD

52. The Board held 37 meetings during the year, as follows :—

2 meetings relative to the assessment of sugar to planters ;

21 meetings relative to changes of delimitation of factory areas (13 of which were in connection with the closing down of Trianon Factory) ;

2 meetings relative to protests against assessment of sugar ;

3 meetings relative to the closing down of weighbridges ;

9 meetings relative to general business.

CANE TESTING

53. The number of tests carried out was 14,888 covering 335 planters or groups of planters supplying canes to 24 factories. The corresponding figures for the 1957 crop were 14,168 tests in respect of 322 planters or groups of planters supplying canes to 25 factories.

ASSESSMENT OF SUGAR

54. Following the publication of figures of provisional assessment of sugar to planters for the 1957 crop, 13 Co-operative Credit Societies, two middlemen, 22 planters and two planters' associations lodged protests against the awards made by the Board.

55. One protest received from a miller was withdrawn. One planter also withdrew a protest. In seven cases the parties came to an agreement before being heard by the Board. The other cases were heard by the Board and all were rejected.

COST OF PRODUCTION

56. Questionnaires were sent to 150 planters, selected according to tonnage of canes produced, and to 6 millers. With a few exceptions, the questionnaires were returned duly filled in and costs of production of millers and planters for the 1957 crop were worked out.

TRANSPORT COSTS

57. Before the 1958 crop started, a schedule was issued showing the maximum rate claimable by millers for the transport of planters' canes in each factory area from the various weighbridges to the factory yards. The schedule was based on the following formulae :—

$C = \text{Rs. } (2.32 + .18 \times m)$ for road transport

and $C = \text{Rs. } (2.50 + .50 \times m)$ for rail transport,

where "C" is the cost of transport per ton of cane and "m" the number of miles over which transport is effected.

DELIMITATION OF FACTORY AREAS

58. 23 applications for changes of delimitation of factory areas were received by the Board. Three of these applications were withdrawn. A change of delimitation was granted in seven cases.

PERMITS TO MIDDLEMEN

59. 53 permits were issued to middlemen for the crop.

COMPLAINTS AGAINST MIDDLEMEN

60. 33 complaints against middlemen were received. With a few exceptions, parties reached an amicable settlement. To secure better control over their dealings, the middlemen have been requested to furnish more detailed information about their transactions.

CANE CONTRACTS

61. 10,950 cane contracts were registered. The total number of registered contracts in force in 1958 was 11,834 covering 19,281 planters.

BREACH OF SALE OF CANES (CONTROL) ORDINANCE

62. 15 cases of breach of the Sale of Canes (Control) Ordinance 1941 were reported to the Police and prosecutions were started against the offenders.

63. The number of planters who failed to enter into contracts with millers prior to the 30th of June is still large, totalling 107.

CANE VARIETIES

64. No change occurred to the list of varieties authorised by proclamation under the Sugar Cane Plantations (Control) Ordinance, Proclamation No. 5 of 1956 remaining in force. Under this proclamation the varieties approved for planting are : M 134/32 (together with its white and striped sports) M 112/34, Ebene 1/37, BH 12/12, B 3337, B 37161, B 37172, M 147/44, B 34104, M 31/45.

CONTROL OF CANE WEIGHBRIDGES

65. 139 weighbridges were in operation in 1958 as compared with 145 in 1957, six having been closed down with the Board's approval. Of this total, 119 were found to be accurate on first examination and 20 had to be re-examined, none of which required to be condemned.

SURPRISE CHECKS CARRIED OUT AT WEIGHBRIDGES DURING THE CROP

66. During the crop, 154 surprise checks were carried out and 132 vehicles were re-weighed (52 carts and 80 lorries). In six cases the weights were found to be inaccurate and the weighers were prosecuted. In addition 12 warnings were issued to weighers for inaccurate weighing.

VIII. Mauritius Sugar Industry Research Institute

67. The Institute, now in its fifth year of existence, continued to make speedy progress in its building development and research programmes. One of the most important measures during the year was the decision to intensify research in sugar technology. More technicians and a team of consultants were appointed as a first step in this development. Other increases in staff included the creation of a seventh post of Field Officer, whose special assignment will be the survey of cane pests and diseases, and the appointment on a permanent basis of a soil analyst.

68. During the year, the buildings of the Bacteriological Laboratory were handed over to the Institute by Government and alterations and extensions were commenced. It is expected that these will be completed by the end of 1959.

69. The research work undertaken during the year is fully described in the Annual Report of the Institute. This publication gives interesting new information on the value of commercial cane varieties approved for large scale cultivation thus enabling planters to select for cultivation the varieties best suited to their localities. The need for more rational use of fertilizers, especially by small planters, is stressed. As regards work on the soil survey of Mauritius, the detailed mapping of certain regions has begun. In the field of cane diseases, research on the control of ratoon stunting and chlorotic streak diseases proceeded and a centre for the heat treatment of cuttings, owned and operated by the Sugar Producers' Association, was opened at Belle Rive. Progress was made on the study of nematodes occurring in the soil about cane roots, several new species being identified. Endoparasites of the root system of sugarcane were also studied.

70. The Cane Quarantine Greenhouse, for which the Department of Agriculture is responsible, was jointly supervised by the Department and the Institute.

71. Close liaison was maintained with the Institute, especially in regard to the Department's extension work with small sugarcane planters. In this way, the experimental results obtained at the Institute are rapidly passed on to small planters all over Mauritius.

IX. The Sugar Industry

CROP CONDITIONS

72. Until the occurrence of a cyclone in March, growing conditions had been so satisfactory that the standing sugarcrop was then expected to reach another record mark. Fortunately this cyclone, as well as another in April, were of mild intensity and an almost normal crop was obtained. It is estimated that the combined effect of the two cyclones resulted in a reduction of weight of 10 per cent on the standing crop. Sucrose content and recovery of commercial sugar were also adversely affected.

CYCLONE AND DROUGHT INSURANCE FUND

73. Following the passage of the two cyclones, the year 1958 was declared a "cyclone year" in terms of the Ordinance governing the use of the Fund. At the end of the year, the assets of the Fund stood at about Rs 123 million, from which it was anticipated that some twenty million rupees will have to be paid out as compensation for cyclone effects.

CANE VARIETIES

74. The regression of the famous M 134 32, to which the Mauritius sugar industry owes so much of its present prosperity, continued and, for the first time in 12 years, the proportion of that variety produced on estates fell below 50 per cent of the total cane weight. The three most popular varieties planted on estates in 1958 were : Ebene 1/37 (29 per cent), M 147/44 (29 per cent) and B 37172 (20 per cent). Long ratooning continued to be a distinctive feature of the local sugar industry.

CROP RESULTS

75. The 1958 crop produced 525,654 metric tons of sugar from a harvested area of 174,000 arpents. Comparative results, showing field and factory figures over the last three years, are given below :—

	1956	1957	1958
Sugar produced (metric tons)	572,500	562,000	526,000
Cane harvested (metric tons)	4,421,000	4,344,000	4,329,000
Yield of cane/arpent (metric tons)	26.3	25.6	24.9
Yield of sugar/arpent (metric tons)	3.41	3.31	3.02
Area harvested (arpents)	167,900	169,600	174,000

76. 60 per cent of the canes milled was produced by plantations with factories, the difference being produced by independent planters including some 15,000 small farmers, many of whom have grouped themselves into cooperative societies for the sale of their canes to factories.

QUOTAS AND PRICES

77. The Commonwealth Sugar Agreement has been extended for a further period of one year and will now run to the end of 1965. The negotiated price under the agreement has been fixed at 43/10 d. per cwt., an increase of 1/8 d. per cwt. This price applies only to 335,000 long tons of sugar which is the negotiated price quota fixed under the agreement. The overall export quota for Mauritius for 1958 being 499,205 long tons, the difference between this tonnage and the negotiated price quota must be disposed of on the free market after allowing for local consumption requirements.

SUGAR EXPORTS

78. The exports of sugar were as follows :—

	<i>Long tons</i>
United Kingdom	421,116
Canada	59,140
Malaya	4,729
Singapore	2,250
Hong Kong	1,250
Iran	8,824
Seychelles	965
Lebanon	9,185
Morocco	9,988
TOTAL	517,447

MOLASSES AND ALCOHOL

79. Export of molasses to the United Kingdom, the United States of America and five other destinations amounted to 59,158 metric tons. The production of alcohol was 1,793,937 litres (100°GL) as against 1,559,000 litres in 1957. The greater part of that production was used locally as rum, denatured spirits and power alcohol, only about 15,000 litres being exported to the Seychelles and Hong-Kong.

THE SUGAR INDUSTRY REHABILITATION FUNDS

80. The Committees of the Sugar Industry, Sugar Millers' and Sugar Planters' Rehabilitation Funds continued their routine functions. The last named, which also operates the Sugar Planters' Mechanical Pool, actively developed a property acquired by the Fund during the year into a large nursery for supplying disease-free planting material to small planters. During the year, the ordinances governing the operation of the Funds were redrafted for presentation to the Legislative Council as a new consolidated and amended ordinance.

X. Tea Industry

TEA COMMITTEE

81. The Tea Committee—an advisory body appointed under the provisions of the Tea Industry Control Ordinance of 1949—met on five occasions during the year.

82. A Government Notice (No. 57 of 1958) comprising regulations made by the Governor in Council under Section 33 of the Tea Industry Control Ordinance, 1949, and cited as the Tea Industry Control (Sale of Leaves) (Amendment) Regulations, 1958, was promulgated during the year. This provides for discretionary variation by the Controller of the Tea Industry of the form of green leaf contracts between manufacturers and planters. The draft bill framed to achieve the creation of a Tea Control Board—to which reference was made in last year's report—failed to reach the Legislature before the end of the year.

MANAGING AGENCY AGREEMENT

83. A significant step in the development of the Mauritian Tea Industry was taken when—following negotiations initiated during the latter half of 1957—Government concluded an agreement with the Nuwara Eliya Tea Estates Company Limited (a sterling tea producing company of repute and with wide tea interests in Ceylon). Under this agreement, a subsidiary styled the Nuwara Eliya Tea Estates Company (Mauritius) Limited was formed for the purpose of taking over the management of the Government's main tea property—the Midlands Tea Estate—and of planning, constructing, and operating a new Government tea factory in the centre of the principal tea development area.

84. The new subsidiary company assumed its functions and responsibilities as Government's managing agents in respect of the above-mentioned properties on 1st April, 1958. By virtue of the same agreement, the new company acquired a 5-year option (exercisable at any time during that period) on a long-term leasehold of the Government's Midlands Tea Estate and certain adjoining and undeveloped Crown Land suitable for exploitation under tea.

CLIMATIC CONDITIONS

85. Drought conditions in the final quarter of 1957 which hampered growth of young tea areas—were succeeded in March-April, 1958 by cyclonic storms. The winds defoliated young tea plants and ring-barked a certain proportion of them, whilst prolonged downpours killed out a high percentage by water logging. Thereafter, temperatures were somewhat low and winter conditions supervened rather early, so that recovery of young tea areas was prejudiced. Adverse weather conditions were also reflected in crop yields from mature areas, which were below expectations.

FACTORIES

86. Expansion of existing manufacturing capacity was undertaken during the year in anticipation of increased crops—this expansion taking the form of certain enlargement projects in privately owned factories. Construction of the new Government tea factory, the "Chartreuse Factory," was commenced by the Nuwara Eliya Tea Estates Co. (Mauritius) Ltd. This factory will have an initial production capacity of 750,000 pounds of black tea a year. Weather conditions and various initial administrative problems retarded early progress on the project, but much of this delay was made good and, when the

year closed, the main factory structure and its ancillary buildings were in an advanced stage and a considerable proportion of the factory machinery had been installed. "Chartreuse Factory"—which is designed for conventional manufacture—is expected to be ready for operation in February–March, 1959.

87. The Bois Chéri Tea factory is being largely reconditioned and reorganised and the enterprise now holds out considerable promise for the future. La Flora Tea factory supplemented and reorganised its rolling room machinery, but did not ultimately put into effect its projected scheme to increase withering capacity by means of drum machinery. This factory—which has been in the throes of major structural expansion over the past two years—is now devoting its energies to consolidation and the adoption of improved organisation and technique. Nouvelle France factory undertook certain structural alterations which—together with some new machinery included a four-foot drier—increased its originally small capacity to a considerable extent. Usine Corson installed some new machinery, including a new four-foot drier. Pont Colville factory remained unchanged. Four of the five original factories are now producing a proportion of CTC teas and one—*La Flora*—also produces a proportion of Legg cut manufacture.

MAURITIAN TEAS

88. The year started well for Mauritian teas on the London auctions and some encouraging prices were realised during the first half of the year; however, owing to freight difficulties, the bulk of the island's exports to the United Kingdom arrived after the market had taken a downward trend. The quality of Mauritian teas showed an overall improvement, but declined as the season progressed. Mauritian tea averaged some 3 d. per pound above the average 1957 price. The first Mauritian teas to appear on the Nairobi market were well received and sold at above valuations in December.

DEVELOPMENT PROJECT

89. The Tea Development Project—which is in the form of a pilot expansion scheme under the auspices of Government and which has as its initial target the development under approved varieties of 3,000 acres of new land—continued to make progress during the year. By far the greater part of the work performed was on Crown Land areas in the upland districts which had hitherto been unutilised and carried only poor natural forest growth.

90. Development of most of these Crown land areas is being undertaken through selected tenants holding between 100 and 300 acres of virgin land on long term leases for the sole purpose of exploitation as tea estates. These tenants are, for the most part, entirely inexperienced and, with the exception of certain Government subsidy grants, are undertaking development at their own expense. It has, therefore, proved to be somewhat difficult to maintain work standards at a fully satisfactory level and there have been instances where drainage systems and soil conservation measures have left much to be desired. Nevertheless, these new planters are profiting from experience and standards are improving steadily.

91. Mechanical units engaged on clearing of land for tea operated satisfactorily during the year. The year closed with an estimated all-in total of about 1,350 acres of new land cleared for tea; of this some 1,050 acres had been planted with imported varieties by the end of the year.

92. Some 5,000 pounds of tea seed of approved varieties were imported from Africa by air-freight and conserved in cold storage until required.

TEA SEED PRODUCTION

93. Mauritius has, at present, two small seed gardens producing good quality seed. One of these, situated at Parc-aux-Cerfs, is some 9 acres in extent and produced 13,056 lb of seed during 1958 as compared with 9,677 lb in 1957 and 10,642 lb in 1956. The other main source of local seed is a small four-acre plot at Midlands Tea Estate. This yielded some 9,265 lb of seed as compared with 8,200 lb in 1957 and 965 lb in 1956. The small one-acre trial seed-bearer plot established at Réduit with layered plants derived from special Assam type bushes at the Tea Experiment Station made satisfactory growth, but is still too young to yield. A considerable portion of the 12 acre seed garden on Crown Land Ajudah (Nouvelle Découverte), which was laid out in 1956 and planted up with seed of Betjan variety, has failed. It has been necessary to abandon half the area pending replanting and the establishment of green crops and windbreaks. A second seed garden on Crown Land Salazie (Nouvelle Découverte), laid out in 1957, now has some 6 acres planted up with seed of Mabira strain.

TEA EXPERIMENT STATION, WOOTON

94. This property, which is at present more a demonstration than an experimental station, was maintained at 70 acres, no new extensions being put down during the year. The station produced 219,786 lbs of green leaf in the crop season 1957-58 (1st July, 1957 to 30th June, 1958), averaging 3,151 lb of green leaf per acre over the entire 70 acres. Of the whole area, however, 10 acres were only in their second year of plucking and 10 acres in their first year. Field No. 2, of imported variety and planted in 1950, yielded 5,263 lb green leaf (1,158 lb made tea) per acre after a clean prune in the preceding winter months, whilst, at the other end of the scale, Field No. 8, of imported variety and only in its third year from seed, yielded 2,196 lb green leaf (482 lb made tea) per acre.

95. Work on vegetative propagation suffered a severe setback when all the artificial shade erected over some 100 clones was destroyed by the cyclonic storms of March and April and all cuttings were lost.

96. Propagation and trial of various new and additional types of shade and cover crops and trees continued. Multiplication of *Flamengia congesta*—which is showing promise as an inter-row green crop—is in hand and it is hoped to harvest a significant crop of seed in 1959.

97. Small scale field trials of fertiliser mixtures, weedicides and plucking and pruning methods were continued.

98. Tea seed conserved in cold storage was progressively tested under field conditions over a period of some 14 months and was found to germinate and to grow entirely satisfactorily, even after being so stored for 12 and 13 months.

99. Construction of a new building, designed to increase storage to provide labourers with rest rooms and to give enlarged vehicle and tractor garage space, was begun towards the end of the year.

MIDLANDS TEA ESTATE

100. This property, which was handed over to the Nuwara Eliya Tea Estates Company (Mauritius) Limited on a managing agency basis with effect from the 31st March, is in excellent condition. The extensive areas planted in 1957 and early 1958 and subsequently integrated with the estate hold out good promise.

PRODUCTION

101. Mauritius produced 1,924,658 pounds of black tea in 1958, the quantity manufactured by each factory being as follows :—

Production of the five factories during the last five years in English lb

	1954	1955	1956	1957	1958
St. Aubin S.E. (Exploitation Bois Cheri) ...	577,883	634,780	694,399	906,248	651,560
La Flora	160,838	246,832	319,022	424,381	580,313
Corson	298,898	317,014	345,444	327,740	309,086
Pont Colville	71,621	104,657	139,465.7	150,273	174,079
Nouvelle France	33,747	36,743	39,264.5	85,110	209,620
TOTAL ...	1,142,987	1,340,026	1,537,595.2	1,893,752	1,924,658
R. Aubeecluck (green tea)...	1,643	1,822	697	66	—

EXPORTS

102. Tea was exported to the following countries :—

	1958	1957	1956
	lb	lb	lb
United Kingdom	712,318	914,690	301,728
South Africa	28,572	48,217	19,989
New Zealand and Australia	25,052	8	2
Other Commonwealth countries	499	450	—
Madagascar and Reunion	1,258	2,543	4,171
Western Europe	6,292	3,306	9,475
TOTAL EXPORTS ...	773,991	969,214	335,365

IMPORTS

103. Imports of tea were as follows :—

	1958	1957	1956
	lb	lb	lb
China	4,580	3,115	2,579
Hong Kong	4,358	4,475	5,810
Ceylon	3,122	11,665	12,898
Other countries	99	156	48
TOTAL IMPORTS ...	12,159	19,411	21,335

XI. Fibre Industry

PRICES

104. During the year prices of fibre remained unchanged. One of the aspects of the new tripartite agreement between the Government Sack Factory, the hemp producers and the sugar millers, which became operative on the 1st January, was the stabilisation of the fibre prices on the basis of those obtaining in 1957. This agreement, however, links the price of sacks with that of imported jute sacks, so that a fall in the price of jute goods affects the price of local sacks. This actually happened in 1958, with the result that local sacks, notwithstanding the various price benefits conferred by the agreement, sold at Rs 1.45 per unit as compared with Rs 1.51 for 1957.

	Price of fibre per metric ton				
	1954	1955	1956	1957	1958
	Rs	Rs	Rs	Rs	Rs
First Grade brushed ...	1,272	1,145	1,031	1,030	1,030

FIBRE PRODUCTION

105. Comparative statistics in regard to the fibre industry are tabulated below :—

	1954	1955	1956	1957	1958
No. of factories operating ...	36	30	25	22	21
Fibre produced (m. t.) ...	1,979	1,722	1,513	1,765	1,576
Local sales of fibre (m. t.) ...	1,882	1,593	1,415	1,793	1,570
Exports (m. t.) ...	58	186	98	—	—
Value of local sales ...	Rs 2,248,000	1,766,000	1,407,000	1,749,000	1,553,000
Value of exports f.o.b. ...	Rs 25,000	100,000	50,000	—	—

106. The trend to close down the small uneconomic fibre factories continued whilst the larger factories tended to increase their capacity in order to cope with an increased supply of leaves.

SACK FACTORY

107. Production figures at the Government Sack Factory were as follows:—

	1956	1957	1958
Fibre processed (m.t.) ...	1,521	1,797	1,570
Sacks produced (80 kgs. capacity) ...	1,401,000	1,657,000	1,423,000
Filter cloth (yards) ...	12,000	15,000	14,000
Other fabrics (yards) ...	2,200	5,700	2,000
Yarn for ropes (kgs.) ...	16,800	10,600	13,700

108. Owing to the lower production and to the drop in the price of sacks, a net loss of Rs 69,000 for the year was incurred as compared with a net profit of Rs 40,000 for the previous year.

109. A new system of bulk loading of sugar was introduced during the year. Aloe fibre sacks are bled in the ship's hold and used in this manner several times over until spent. The spent sacks are re-sold to the Sack Factory for stripping and re-processing into new sacks after blending with fresh fibre. The last stage of the new procedure had not yet been reached at the end of the year because used sacks were not yet available in sufficient quantity to start manufacture.

XII. Tobacco Industry

110. Production was limited to the estimated requirements of the British-American Tobacco Co. (Mauritius) Ltd. and the provision of a small stock of 55 tons of Amarello (Burley) leaf for possible export. However no market was found for this leaf and the British-American Tobacco Co. agreed to take it over for local manufacture.

CROP CONDITIONS

111. The crop of flue-cured Virginian, which had started well at the beginning of the year, suffered heavy losses from the cyclones of March and April. Many growers replanted their fields in April-May, but the crop makes very little growth in winter. Moreover, drought conditions prevailed early in the second half of the year.

112. The August plantings of flue-cured Virginian on the eastern plateau were more successful. Rainfall was adequate and high yields of good quality leaf were obtained.

113. The flue-cured Amarello planted in March—April suffered only little damage from the cyclones. The air-cured Amarello planted in April—May suffered from drought conditions in the second half of the year.

114. Frog eye was prevalent in many areas; there was little damage caused by *Alternaria* Brown Spot.

115. There was a very high incidence of leaf-eating caterpillars starting immediately after the cyclones. These were kept under control by applications of DDT.

ISSUE OF PERMITS

116. The following table compares the issue of permits in 1958 with that of the previous year :—

	1957		1958	
	<i>Arpents</i>	<i>Kilos</i>	<i>Arpents</i>	<i>Kilos</i>
Flue-cured Amarello ...	96	85,000	83	75,000
Flue-cured Virginian ...	522	190,000	617	188,000
Air-cured Amarello ...	178	156,500	274	237,000
TOTAL ...	796	431,500	974	500,000

The higher allocation of air-cured Amarello was effected to replenish the stock of the British-American Tobacco Company which had dropped to a very low figure in this grade of leaf.

PRODUCTION

117. The actual production is shown below with the 1957 figures for comparison :—

	1957		1958	
	<i>Arpents</i>	<i>Kilos</i>	<i>Arpents</i>	<i>Kilos</i>
Flue-cured Amarello ...	96	82,257	81	77,818
Flue-cured Virginian ...	522	221,737	617	199,541
Air-cured Amarello ...	178	134,319	267	220,811
TOTAL ...	796	438,313	965	498,170

YIELDS AND RETURNS

118. As a consequence of cyclones, the yield of leaf and the financial returns to growers of flue-cured Virginian were lower than in 1957.

		<i>Average yield per arpent</i>	
		1957	1958
		kgs	kgs
Flue-cured Virginian	...	425	323
Flue-cured Amarello	...	856	961
Air-cured Amarello	...	756	825
		<i>Average return per arpent</i>	
		1957	1958
		Rs	Rs
Flue-cured Virginian	...	2,551	2,003
Flue-cured Amarello	...	4,197	5,243
Air-cured Amarello	...	1,866	2,084
		<i>Average value per kilo of leaf</i>	
		1957	1958
		Rs c	Rs c
Flue-cured Virginian	...	6.01	6.19
Flue-cured Amarello	...	4.90	5.46
Air-cured Amarello	...	2.47	2.53

QUALITY

119. The improvement in quality of the crop already noted last year progressed further, the percentages of the bright and medium grades for 1958 being somewhat higher than in 1957.

		<i>Percentage of bright and medium grades</i>				
		1954	1955	1956	1957	1958
Flue-cured ...	...	50	70	69	73	78
Air-cured ...	...	10	15	16	21	25

LOCAL MANUFACTURE

120. The manufacturer's purchases and usings of domestic and imported leaf were as follows :—

		<i>Kilos Domestic</i>	<i>Kilos Imported</i>	<i>Kilos Total</i>	<i>Imported % Total</i>	<i>Value per kilo</i>	
						<i>Imported C.I.F. Rs c</i>	<i>Domes- tic Rs c</i>
1957							
Purchases ...	390,464	68,797	459,261	15.0	9.85	5.73	
Usings ...	453,302	104,999	558,301	18.8	—	—	
1958							
Purchases ...	409,591	125,323	534,914	23.4	9.94	5.63	
Usings ...	449,239	84,205	533,444	15.8	—	—	

121. The percentage of imported leaf used in manufacture of local cigarettes has dropped for the fourth year in succession as shown by the following figures :—

1954	1955	1956	1957	1958
27.2	26.2	22.8	18.8	15.8

122. It appears from these figures that the Tobacco Board's policy of encouraging the production of better quality Virginian leaf capable of replacing imported leaf is having the desired result.

123. The comparison of the values of imported and domestic leaf purchased by the manufacturer given in paragraph 120 is not strictly valid as the imports consist only of Virginian leaf, whereas the domestic purchases include Amarello. The average C.I.F. value of Rs 9.94 for imported Virginian leaf compares with Rs 6.16 per kilo for domestic Virginian. The average values of Amarello flue-cured and air-cured purchased by the manufacturer were Rs 6.14 and Rs 3.40 per kilo respectively. Domestic Virginian, blended with imported leaf, is used in the manufacture of the "Embassy" and "Soirée" brands of local cigarettes which sell in competition with imported Virginian cigarettes. Amarello leaf and some of the lower grades of domestic Virginian are utilised for the cheaper brands, selling below the price range of imported cigarettes.

IMPORTS

124. Imports of unmanufactured leaf and cigarettes for the last two years are tabulated below :—

			1957		1958	
			Kilos	Value Rs	Kilos	Value Rs
Cigarettes	...	...	86,011	1,558,322	104,559	1,912,374
Leaf:—						
Rhodesia	...	...	25,753	248,254	65,249	627,525
U.S.A.	...	...	43,044	429,748	60,074	618,750
TOTAL LEAF	...	...	68,797	678,002	125,323	1,246,275
TOTAL	...	...	154,808	2,236,324	229,882	3,158,649

125. Although the usings of domestic leaf have increased from 420,814 kilos in 1955 to 449,239 kilos in 1958 and the usings of imported leaf have fallen from 148,873 kilos in 1955 to 84,205 kilos in 1958, the net result has been a reduction in the total amount of usings, from 569,687 kilos in 1955 to 533,444 kilos in 1958. This has been owing to the higher importation of cheap brands of Virginian cigarettes.

126. The recommendations made by the Tobacco Board in January 1957 for a revision of Customs and Excise Duties with a view to affording a greater measure of protection to the local industry were adopted by Government in October 1958. The effect of this revision will not be felt for some time until the large stocks of imported cigarettes have diminished.

EXPORTS

127. 54,768 kilos of air-cured Amarello (Burley) of a value of Rs 163,884 were exported to the United Kingdom and the Continent. Prospects of a regular export market remain discouraging.

TOBACCO BOARD WAREHOUSE

128. The roof of the Warehouse suffered considerable damage from the first cyclone and the structure has had to be reinforced.

129. There has been a marked improvement in the control of the tobacco beetle at the Warehouse, while the manufacturer obtained excellent results by putting his tobacco, both imported and domestic, in cold storage which kills the beetle at all stages of development.

XIV. Livestock

ARTIFICIAL INSEMINATION CENTRE, REDUIT

132. With further improvements to the station carried out under the Development Plan, the Centre now houses 14 creole bulls for artificial insemination work throughout Mauritius. The daily outdoor exercise and balanced feeding of the stud animals was continued and the quality of semen was entirely satisfactory during the year. The arrival of more laboratory equipment has permitted better control and has resulted in improved investigational as well as routine work at the station.

133. The following works were completed during the year at this station where the Division's headquarters are centralised and where the quarantine kennels are situated : re-roofing of all byres, construction of lean-to sheds for fodder and litter, rest room for labour, two offices, garage for land rover and lorry and kitchen for quarantine kennels.

LIVESTOCK EXTENSION SERVICE

134. The first newly constructed sub-office in Savanne was opened at Rivière des Anguilles in May ; a new Extension Sub-Office was opened at Bel Air, Flacq, in December.

135. During the year 7,943 cows were inseminated. The conception rate was 65% which compares favourably with other artificial insemination centres under similar climatic conditions.

136. In addition 1,506 assessments for pregnancy, 468 enucleations of cystic ovaries, 388 cases of difficult calving, 949 cases of deficiency complex, 644 cases of digestive disorders, 341 cases of udder infections and injuries and 261 miscellaneous cases were attended to.

137. Besides attending to the specific cases enumerated above, advice was given to breeders of poultry, pigs, goats and sheep on management and feeding problems. Officers of the Division have also helped poultry producers in vaccinating their stock.

VETERINARY LABORATORY

138. The Veterinary Laboratory made significant progress despite shortage of accommodation and equipment. It produced 345,000 doses of Newcastle Disease vaccine and 121,000 doses of Fowl Fox vaccine. Steps were also initiated for the production of Swine Fever vaccine. Routine examinations, involving 659 postmortems, were conducted.

139. Investigations were conducted into a number of poultry and small animal diseases, particularly aspergillosis, psittacosis, leptospirosis, spirocercosis and dirofilariosis. Aspergillosis and leptospirosis (*Leptospira canicola*) were confirmed as existing in Mauritius.

140. To detect mastitis in its early stages, a survey was conducted amongst Government dairy animals by using spot tests for pH value of milk. This method yielded encouraging results and a number of cows suffering from sub-clinical mastitis were detected, the cases being later confirmed by laboratory investigations.

141. During the year assistance in laboratory examinations was provided to the Central Health Laboratory to help diagnose cases of human leptospirosis, a disease transmissible from animals to man. A case of jaundice in a human patient caused by *Heptospira icterohaemorrhagica* (Weil's disease) was confirmed.

ANIMAL DISEASES

Swine Fever

142. For the first time in the history of Mauritius swine fever made its appearance early in the year in two separate and distant parts of the island causing high mortality amongst young and adult pigs. Clinical findings and laboratory investigations confirmed that the swine fever was of European origin, but how it got into the Colony still remains undetermined.

143. Mass vaccination with crystal violet vaccine imported by air from Weybridge, coupled with the imposition of restrictions on the movement of pigs and restricted slaughter, helped to circumscribe the disease in a short time. The vaccination campaign was continued until the disease, by the end of the year, had been virtually stamped out. The total number of pigs vaccinated in Mauritius was 5,000. In Rodrigues, to which this measure was extended, 9,000 were vaccinated. To prevent recurrence of the disease, vaccination of young stock is being continued for some time more in 1959.

Bovine Tuberculosis

144. During the year 2,239 tuberculin tests were performed on herd cattle and 976 on dairy cattle. The reactors, 7 per cent and 2 per cent respectively, were sent for slaughter. With the cooperation of the stock breeders, the infected areas on various properties were disinfected and isolated. Taking into consideration the percentage of reactors in 1957 on herd cattle, which was 16 per cent, the results obtained in 1958 are encouraging. With the elimination of reactors, and isolation and disinfection of infected areas, it is hoped to rid the herd cattle of tuberculosis as a first step in the eradication of disease from all cattle in Mauritius.

145. Government stock at the breeding station were also tested and a few reactors amongst the newly purchased stock were immediately culled. The stations then, as subsequent tests have shown, have remained free of tuberculosis.

POULTRY DISEASES

146. So far the vigil maintained on importation of poultry and other birds has kept Mauritius free from contagious and infectious poultry diseases save Newcastle disease, fowl pox, lymphomatosis and coccidiosis.

147. Fowl pox and Newcastle disease vaccines prepared in the Division's Veterinary Laboratory were made available to poultry breeders throughout the year. Mass vaccination of birds has kept both these diseases under control.

148. Coccidiosis has also been kept under satisfactory control through improvements in sanitation and use of specific drugs available under a number of proprietary brands.

149. Lymphomatosis has affected flocks under intensive management up to 5 per cent, mainly during growing stages. Unfortunately, there is no specific treatment, but better husbandry has yielded fruitful results.

LIVESTOCK BREEDING STATION, PALMAR

150. The station is used in conjunction with that at Curepipe to produce and rear Creole cattle for breeding purposes, for the production of progeny-tested sires for use in artificial insemination work, to provide male breeding stock of beef breeds suitable for local conditions and, finally, to make available purebred goats to the small breeder for the upgrading of his stock.

151. During the year, most of the adult Creole bulls and cows were transferred to Curepipe, but young stock after weaning was concentrated at the station. There were also 96 zebu cattle of the Ongole breed and 36 Anglo-Nubian goats,

LIVESTOCK BREEDING STATION, CUREPIPE

152. The object of this station is to consolidate the Creole blood and standardize the breed through selective breeding.

153. In keeping with the present functions and activities of the station, its name was changed from "Government Dairy" to "Livestock Breeding Station".

154. There were, at the end of the year, at the station 6 bulls, 55 cows, 15 heifers, 14 bull calves and 11 heifer calves. Accommodation has been provided for 100 cows and such of their progeny as will be kept for breeding or progeny testing purposes.

155. The following works were completed during the year under the Capital Expenditure Programme : a Danish type piggery, quarters for the Resident Stock Inspector, the reconstruction and improvement of young stock pens, isolation pens and bull shed, the installation of an incinerator and a weighbridge. Also, labourers quarters were enlarged and improved.

156. The production of milk for 52 cows was recorded as follows :—

	Kgs.	lbs.	gl.
Total milk produced	128,587	282,891	28,289
Average production per cow	2,472	5,440	544

The daily average production per cow was 6.77 kilos. This was slightly higher than in 1957 although 40 per cent of the animals calving during the year were first calvers.

157. The breeding of pigs at the station will begin in the near future. The Danish type piggery was nearing completion at the end of the year. The object of this development is to provide to breeders, at cost, piglets of good quality.

SLAUGHTER HOUSES AND MEAT INSPECTION

158. Inspection of slaughter houses was continued throughout the year. Female animals of the milk breed were only slaughtered on permits.

159. Lectures on meat inspection and hygiene were delivered to Sanitary Inspectors of the Health Department.

IMPORTATION OF ANIMALS

160. Inspection of all animals, frozen meat and products of animal origin imported into the Colony was maintained in accordance with the terms of the Animal Diseases Ordinance.

XV. Land Settlement

161. The Land Settlement Committee held four meetings during the year and examined various matters pertaining to the conditions of tenure and selection of new tenants.

162. General maintenance works were performed by the tenants under the control and guidance of the Agricultural Officer i/c Settlements. Mechanical clearing of approximately 5 acres at Terre Rouge was carried out.

163. The standard of crop husbandry on all the settlements has been generally satisfactory ; but some of the tenants who consistently failed to improve their cultivation had to vacate their holdings and were replaced.

164. In 1957 Government decided to allow tenants to buy the huts and cowsheds on their holdings at a nominal price. 44 out of the 50 houses on the 4 existing settlements have been sold. Tenants who have become owners of their dwellings pay a reduced rent for their holdings.

165. On most settlements the houses are occupied by the tenants themselves ; but at Richelieu none of the tenants is living on the spot, as all prefer to reside in the neighbouring township of Beau Bassin.

166. Although the main irrigation works were completed in 1957, considerable attention and time had to be devoted to the distribution of water to individual holdings. This work was performed by the tenants themselves under the supervision of the Surveyor.

EXTENSION OF SETTLEMENT SCHEMES

The Vale

167. The area available was divided into 13 small-holdings of one acre each, in addition to the 3 holdings already leased in 1957. Selection of the tenants had been completed by the end of the year.

Palmar

168. Scrub and trees over the area of 100 acres were cleared and about 50 acres were mechanically cleared of stones and ploughed ready for occupation early in 1959.

Bee Manique

169. An area of approximately 425 acres of land, formerly belonging to the Grand Port—Savanne District Board, has been released for settlement purposes. Well over half of the area had been clear-felled by the Forest Department by the end of the year ready for mechanical clearing. To this end, a heavy tractor with bulldozer purchased in December started to operate. It is estimated that 200 acres of improved land will be ready for lease in 1959.

170. Contour planting of grass on the steeper slopes of the area started in December. Survey and colour mapping was well advanced at the end of the year.

Plaisance

171. About 150 acres of scrub land forming part of the aerodrome have been placed at the disposal of this Department for allotment purposes. Most of the area was mechanically cleared ready for distribution in 1959.

RELIEF ALLOTMENTS

172. The nine sections of Relief Allotments remained in operation during the year. The allocations of land on the various sections is summarized as follows :—

	No. of Allottees	No. of Huts	Acreage
Curepipe	30	32	35
Malherbes "... ..	18	18	18
Barkly (East)	27	27	27
Barkly (West)	31	31	31
Richelieu	27	27	27
Bois Marchand (East)	20	—	20
Bois Marchand (West)	14	—	14
Elysée	38	—	38
Moona	6	6	6
TOTAL	211	141	216

173. During the year, 2 allottees were evicted, 4 resigned and 11 new families were allocated allotments. Cane straw and timber poles were distributed for repairs to huts. Rent was collected to a total of Rs 212.

XVI. Extension Services

VISITS TO PLANTATIONS

174. The main duty of the officers of the Extension Service was to advise planters on the more rational use of fertilizers, the control of pests and diseases, soil conservation measures and general improvement of their methods of crop husbandry. A total of 7,600 visits to small farmers were made during the year.

DEMONSTRATION WORK

175. The number of demonstrations of the correct use of fertilizers, involving type of fertilizers used, time of application and correct placement, conducted on farmers' lands totalled 144. Of these, 83 were on sugarcane and 61 on various other crops. In the majority of cases, marked differences in favour of the use of complete fertilizers—as compared with potash or phosphate used alone or in combination—were apparent. The yields obtained at harvest confirmed the visual differences, increases in yield of up to 15 tons per acre being recorded with sugarcane, up to $3\frac{1}{2}$ tons with onions and up to 5 tons with cabbage. Increases in yields of 1 to 2 tons were recorded with tomatoes and potatoes.

176. 196 demonstrations were conducted on the control of pests and diseases; 5 demonstrations of the use of herbicides were made.

177. Evening meetings of extension service staff with farmers in villages numbered 158. The purpose of these meetings is primarily to establish contact with planters of as many localities as possible, discuss their problems and advise them. Talks on specific crops are also made in the course of these meetings and lantern slides and film strips are shown.

PROPAGATION AND DISTRIBUTION OF SUGARCANE VARIETIES

178. 30,000 canes of newly released varieties were distributed to planters from the various propagation plots already laid down. 23 new plots were planted in 1958, mainly in the North, in Moka-Flacq, Plaines Wilhems and Black River. No new propagation plots were planted in the southern districts, as these regions are now well provided with the new varieties recommended and an easy supply from planter to planter is available.

179. It is of great interest to note that small planters are now becoming increasingly variety-conscious. Many are even already looking ahead to the new promising cane varieties now under trial at the Mauritius Sugar Industry Research Institute, but which have not yet been released for commercial cultivation.

180. In the southern districts, the change over from the standard M. 134/32 variety to the newly release varieties, M. 147/44, B. 37172, M. 3145, B. 3337 and E. 1/37 is rapid. In the North, however, progress is slower, only 110 acres of M. 147/44, 55 acres of M. 31/45 and 50 acres of B. 37172 having been planted by small planters during the year.

CANE NURSERIES FOR SMALL PLANTERS

181. The scheme, financed by the Sugar Planters Rehabilitation Fund, to provide small sugarcane farmers with disease-free planting material made much progress. A portion of land of 150 acres was purchased at Pointe-aux-Sables. Clearing operations were started at once. Two adjoining portions of land aggregating 175 acres were also purchased at the end of the year, bringing the size of the nursery farm to 325 acres.

182. 25 acres were planted with heat-treated cuttings for harvest and distribution as planting material in June-July, 1959. This area was planted with newly bred varieties for multiplication in anticipation of their probable release for general cultivation in 1959 and 1960. In this way, new varieties will become available for distribution to small cane farmers immediately after their approval as commercial varieties.

OCCURRENCE OF PESTS AND DISEASES

183. The major crop disease in 1958 was late blight on tomatoes and potatoes. The incidence of the disease was high owing to the rainy and humid conditions that prevailed until June.

184. The control of pests and diseases is becoming more and more popular with the Mauritian small farmer. Many have purchased sprayers for their own use and for hire to their neighbours. The sprayers are usually hired at Rs. 4 to Rs. 5 per day. A number of enterprising individuals have started a new service in purchasing sprayers for the treatment, on contract, of farmers' crops at the rate of Rs. 5 per acre, the chemical being supplied by the farmer.

185. Control of the bean fly by spraying with aldrin or DDT in the early stages of growth is now well established, with the result that French beans are again available in good supply almost all the year round.

186. Fruit flies have proved a major pest in 1958 on a wide range of fruits and on cucurbitaceous crops. The use of insecticides was recommended wherever possible. Extension Officers have helped the Entomological Division in the release of parasites received from abroad. Satisfactory results have been obtained in the control of cucurbitaceous fruit flies by the use of poisoned sugar syrup applied in a light spray on maize plants interplanted as a bait crop, whilst control of *Pardalaspis cyanescens* Bezzi, the tomato fruit fly, was obtained by the use of aldrin or DDT in the early stages of growth and of dipterex applied at the bearing stage.

187. Cutworms have been most troublesome. Agrocide-bran bait was used with good results. The spraying of aldrin directly on the ground round the plants or in the holes has also proved very successful in protecting the crops in the early stages.

RATOON STUNTING DISEASE OF SUGARCANE

188. A campaign was launched during the 1958 crop season to bring home to the small farmer the necessity of controlling this disease. The matter was discussed at all farmers' meetings, in Village Councils, with Cooperative Credit Societies and middlemen during the crop. In the St. Antoine Factory area planters were encouraged to disinfect their cane knives prior to harvesting. Arrangements were made with the Manager of St. Antoine Factory for the free distribution to planters of zephirol, one of the disinfectants, recommended for the purpose. The Sugar Planters Rehabilitation Fund was also asked to assist in the campaign by defraying the cost of the disinfectant so issued to planters through the kind assistance of the Manager of St. Antoine Factory. Some 55 gallons of the diluted disinfectant were issued. This response was unexpectedly poor in view of the intensive campaign conducted. It is considered, however, that the campaign, as a first approach to the problem, has served quite a useful purpose in putting across the necessity to control the disease.

PERMANENT DISTRICT DEMONSTRATION PLOTS

(1) Arsenal Demonstration Plot

189. This plot produced about 15,000 canes which were used as planting material for the establishment of propagation plots of new cane varieties,

190. A wide range of vegetables was grown, producing 4,665 kgs. The revenue derived from the sale of the produce amounted to Rs 3,157. This poor return was due mainly to the fact that no potato crop could be taken owing to unavailability of seed, so that crops of lesser cash value had to be substituted. The occurrence of cyclones in March and April were also factors contributing to the low cash return.

(2) Mapou Demonstration Plot

191. Initial preparatory work started on 17th March, 1958. The plot produced 4,727 kgs. of foodstuffs which were disposed of for a return of Rs 4,799. Here too, returns fell somewhat short of expectations, mainly because of the severe drought that prevailed during the first part of the year.

(3) Vacoas Demonstration Plot

192. This Demonstration Plot, which is situated in a locality where rainfall is fairly adequate, produced 32,000 kgs. of foodstuffs during the year. The revenue derived from the sale of produce was satisfactory, amounting to Rs. 6,993.

(4) Riviere des Anguilles Demonstration Plot

193. The first plantation was made on the 3rd February. The Demonstration Plot was formally inaugurated on the 5th May. The crops collected from this plot, a total of 19,123 kgs., sold for Rs. 5,365.

194. Numerous planters have visited the Demonstration Plots during the year, either to obtain advice on some specific problem or for information on the methods in use by the Department of Agriculture.

VEGETABLE CLUBS

195. The activities of the Women's Vegetable Club at Bois Chéri were satisfactorily maintained. Foodcrop cultivation, which was unknown in the locality before the club was created, is now becoming a feature of the village. Trial potato crops have been grown in the interrows of sugarcane by two farmers of the locality. Although blight incidence was high, encouraging results were obtained following the control measures applied. A sprayer was placed at the disposal of the villagers by the District Council of Grand Port—Savanne.

AGRICULTURAL TEACHING IN PRIMARY SCHOOLS

196. A thousand visits were paid by Extension Officers to the 66 primary schools running gardening classes. In general, the school gardens maintained a very good standard, especially during the winter months when a large variety of the finer vegetables are grown reflecting the keen interest of both teachers and pupils.

CONTROL OF SOIL EROSION

197. Farmers were persistently advised to adopt contour planting on slopes. Although such methods mean a radical change from common practice in Mauritius, a number of small planters have actually been persuaded to plant on the contour. 35 acres of land were marked by the Extension Officers for cane cultivation in this way. The fields that were contour-planted in 1957 stood fast during the heavy rains, even in places where 20 inches fell in 24 hours.

RADIO INFORMATION

198. Talks of agricultural interest were broadcast monthly during the year with the collaboration of the various specialist officers of the Department. A version of these talks in Hindi was given on the Indian Programme of the Broadcasting Service.

AGRICULTURAL WEEK

199. From the 12th to the 17th December, an "Agricultural Week" was held in the Village of Triolet with the assistance of the Social Welfare Department. This event was inaugurated by the Minister of Agriculture and Lands. The week's proceedings included a series of talks on insect pest control, poultry keeping, fruit tree growing, veterinary help to farmers, food-crop growing, research as a means of help to farmers and general animal husbandry. The talks were given by specialist officers of the Department of Agriculture and were followed by suitably selected films of agricultural interest. There were also a number of permanent exhibits. These comprised the various insect pests attacking crops, the chemicals and apparatus available for pest and disease control, types of animal feeds prepared by the Department of Agriculture for the use of stock breeders, etc.

200. It is estimated that 1,700 persons visited the exhibits, listened to the lectures and attended the film shows. An Agricultural Officer was permanently in attendance in the village during the week so that prompt answers could be given to farmers' enquiries.

MISCELLANEOUS ACTIVITIES

201. The staff of the Extension Service was occasionally engaged on the assessment of rental value of Crown Lands, on assessment of damages caused to crops by accidental floodings and the indiscriminate use of herbicides, and on various other matters.

XVII. Experiment Stations

GENERAL

202. Work on development of the experiment stations is nearing completion. Richelieu Experiment Station now has approximately 50 acres of arable land laid out on the contour. The beneficial effect of contour cultivation was adequately demonstrated during the cyclonic weather in the early part of the year when, despite heavy precipitation, no soil wash occurred. A comprehensive system of crop recording has been started to suit the new field layout. Curepipe Experiment Station continued to give valuable information from cultivation experiments under super-humid conditions. Further land clearing was carried out and it is planned to complete development by the middle of 1959. Barkly Gardens and Experiment Station continued plant propagation and vegetable seed production on a large scale.

203. Sale of plants and seeds again exceeded previous figures and there is, as yet, no indication that the market is fully supplied. 3,900 kilos of seeds, including 3,445 kilos of peas and beans, were produced during the year. This seed was grown on an area of 26.5 arpents distributed as follows:—

<i>Arpents</i>				
Barkly	...	...	...	13
Réduit	...	...	...	6
Richelieu	...	...	...	7
Pamplemousses	...	...	...	10.5
TOTAL				36.5

Further extensions of the seed production area are under consideration.

204. A new line of work at Barkly has been the initiation of a series of trials on hydroponics. It is planned to intensify the work in the coming year. At Reduit, the citrus plots showed marked improvement during the year.

205. Cyclonic weather during March and April caused considerable damage to vulnerable crops on the stations, the tobacco crop at Richelieu being seriously affected. Towards the end of the year, severe drought conditions caused several of the fish ponds at Curepipe to dry out.

206. An "Open Day" was held at Curepipe Experiment Station in December when the station was opened to the public for the first time. Exhibits were prepared to show the work of the other stations and demonstrations of cultural operations were given. His Excellency the Governor, the Minister of Agriculture and many guests and senior officials were present. Over 1,200 members of the public visited the station during the day.

CUREPIPE EXPERIMENT STATION

(1) Development

207. 11 acres of land were cleared and put under cultivation during the year. Access roads were built and fencing of the station was completed. Seven new small fish ponds for breeding purposes were constructed and a header reservoir was built to provide a water reserve for drought periods. Further buildings included two duck houses, a small cowshed, litter store and implement shed, petrol tank and pump installation and several small labourers' shelters in the fields. Two tower silos were constructed at the Livestock Breeding Centre, Curepipe. These silos have a capacity of 100 tons each. Work was commenced on the clearing of a further 10 acres of land for tree crops, fish ponds and grass plots.

(2) Fodder

208. Yields of *Setaria* grass up to 30 tons per acre per annum have been obtained with fertilizer applications of 200 lb. sulphate of ammonia per acre after each cutting.

209. Supplies of fodder and litter to the Livestock Breeding Centre were maintained during the year at the rate of $3\frac{1}{2}$ tons of fodder and 1 ton of litter per day.

210. Observation plots were established at Curepipe of Russian Comfrey (*Symphilum peregrinum*), lucerne (*Medicago sativa*) and acasia (*Leucaena glauca*) with a view to assessing their possibilities in the wet zones. Growth so far appears promising in all cases.

(3) Orchard Crops

211. Planting of the 5 acres of citrus stocks was completed during the year. Top working of the stocks will be carried out in 1959. Growth of the local mandarin is not very promising and it is intended to replace part of these with *vangassai*, a local sour mandarin.

(4) Food Crops

212. Work on food crops was continued; good yields were obtained with many vegetables. Small plots of cabbage, cauliflower, lettuce, brinjal okra, squash, peas, beans, tomatoes and chillies were successfully cropped. Of the main food crops, maize and potatoes appear to grow well in the area if planted at the right time. Potato yields were good, Kerr's Pink ex-Kenya yielded 7,288 kilos per acre and Delaware ex-Australia gave 8,247 kilos per acre. Dwarf Beans var. Victory taken during the main season for cropping (September--December) yielded 6,735 kilos. The need for adequate fertilizer dressings was apparent.

(5) Livestock

213. During 1957 ducks were introduced on the station with a view to utilizing the fish ponds and assessing the possibility of supplementing the income of a fish farmer with little additional capital outlay. During 1958 the flock increased rapidly, and new houses were erected on various ponds. It is now apparent that ducks can be of value on fish ponds and it is intended to continue investigations on management and breeding and to give an assessment of the economics of the venture.

214. Late in the year, a breeding trio of geese were purchased locally. These birds are likely to be of value since they graze the grass round the ponds and so reduce maintenance costs. They are also an additional source of income.

215. In May 1958, day-old White Leghorn chicks were received from Australia. By the end of the year, these birds were laying and egg production has been good. Severe culling was, and will be, done to keep the number of birds to around 100. Poultry investigations are being carried out in cooperation with the Livestock Division and the Curepipe and Richelieu flocks are being used as part of the whole poultry research scheme.

216. With a view to obtaining information and to serve as a demonstration, a small cowshed was constructed on one of the fish ponds. All urine and manure from the cattle drops directly into the pond, thus inducing growth of further vegetable food for the fish.

REDUIT EXPERIMENT STATION

(1) Development

217. Four acres of land have now been fully contoured and fields are being re-arranged to allow efficient tractor cultivation and to give protection against wind damage and soil erosion. The equipment to complete the overhead irrigation system at the station is on order.

(2) Orchard Crops

218. The growth of citrus stock plants introduced in 1955-56 was not encouraging during the early part of the year. Zinc deficiency was suspected, but leaf sprays gave only temporary effects. Trace element mixtures of zinc, boron, manganese and molybdenum also gave little response. Later investigations appeared to indicate that the plants were suffering from general starvation and it was found that in many cases this was due to waterlogging. Irrigation was stopped in September, no water being applied throughout the dry season. The trees did not appear to suffer from water shortage, and by the end of the year were looking in good health. The budding and grafting programme can now be speeded up and it is hoped to complete the current work by the end of 1959.

219. The banana variety collection on the station was severely damaged during the cyclonic weather early in the year, but has since recovered considerably.

220. The work on pineapples continued, but results from mealy bug control trials were not encouraging.

(3) *Grass and fodders*

221. Fodders *Setaria sphacelata* and elephant grass (*Pennisetum purpureum*) both gave good results at Reduit. Investigations into the effect of time of cutting on yield and protein content were carried out on *Setaria*. Supplies of fodder and litter to the Artificial Insemination Centre at Reduit were maintained as far as possible from station crops.

222. Observation plots of Russian Comfrey (*Symphylum perigrinum*) and Lucerne (*Medicago sativa*) were established, results to date being promising.

(4) *Food Crops*

223. Variety collections of cassava, yams, sweet potatoes and other crops were maintained. A fertilizer trial on maize was carried out. Some six acres of vegetable crops for seed production were grown. Small plots of ginger, groundnuts, brinjal and beans were also grown.

BARKLY GARDENS AND EXPERIMENT STATION

224. Once again the sale of seeds and plants exceeded those of previous years. The bulk of the revenue for seeds came from peas and dwarf beans and production of these crops will be increased in the coming year. The acclimatised seed of Victory Bean is very popular with the planters and, despite increased production, the demand for seed still exceeds the supply.

225. Values of sales of seeds and plants over the last three years are tabulated below :—

			1956	1957	1958
			Rs	Rs	Rs
Sale of seeds ...	...	...	16,928	21,471	26,069
Sale of plants ...	...	...	15,314	14,618	16,244
TOTAL	...	...	32,242	36,089	42,312

(1) *Development*

226. The new garage and barn started in 1957 were completed. A plant shed was in course of renovation for use as a plant showroom. On the new land, acacia hedges planted in 1957 showed their efficacy by the amount of soil already being retained on the upper sides.

(2) *Citrus*

227. Work on citrus propagation made little progress during the year owing to shortage of budwood. Large stocks of seedlings are now on hand at Barkly for budding or grafting.

(3) *Vegetables*

228. Cauliflower and cabbage seed of various varieties was imported from South Africa for trial under local conditions. Of the eight cabbage varieties, none bloomed, so that all were discarded for seed purposes. Of seven cauliflower varieties, two—*Southern Cross* and *Italian Giant*—produced good curds and were retained for further trial.

229. Beetroot varieties from South Africa again failed to produce seed under local conditions. Trials were carried out to assess the value of artificial light for continuous periods of 20 and 40 hours using M.N.V.P. lamps, but results were negative.

(4) *Hydroponics*

230. Small scale trials on hydroponics were initiated at Barkly. The Bengal System was adapted for local conditions, basalt chips and basalt sand being used as the inert media. Nutrients were supplied by application of dry powder dusted at intervals of 8 to 10 days on the basalt and washed in with water. Watering of the plants was carried out three times daily. The proportion of chippings and rock sand were investigated, results so far indicating that 5 parts chippings to 2 parts rock sand by volume give the best results. Cropping of hydroponic beds with potatoes and dwarf beans gave higher yields than control plots grown on conventional soil beds.

RICHELIEU EXPERIMENT STATION

(1) *Development*

231. The lower part of the station was laid out on the contour, using 100' paralld strip fields. Cropping of the new area was commenced in July. A mango orchard of nearly four acres was prepared and planted during the year. This orchard is intended to be used as a source of stocks and scions for the mango propagation programme. The laying of permanent irrigation mains for overhead watering was completed during the year.

(2) *Tobacco*

232.—(a) *Seedbeds*. The control of weeds, pests and diseases on seedbeds of tobacco were the main items under investigation during the year.

233. The efficacy of ethylene-dibromide injected into the soil at a depth of 9" at 12" centres over the beds was again demonstrated. Sowing was done two weeks after soil injection. The plants in the treated beds were of more even growth and more vigorous than in the control beds. Seedlings were ready for picking out into soil blocks 28 days after sowing, whereas in untreated beds seedlings reached the same stage of development after 36 days. It is essential that manure mulch be applied to the beds prior to treatment with E.D.B. as it was found that manure was often a source of eelworm infection. The water used for watering the beds did not appear to be a source of infection whether obtained from well, stream or pond. The effect of ethylene dibromide is mainly nematocidal, as weed growth during the interval of 14 days between treatment and sowing was considerable. This observation gave rise to a series of trials to assess the minimum interval necessary between treatment with E.D.B. and sowing. Results indicate that an interval of seven days is sufficient to avoid any adverse effect on the growth of the seedlings.

234. The use of aldrin and chlordane in controlling red ants on seedbeds was studied. Aldrin 40 per cent W. P. at 5 grams per square foot was applied :—

- (i) as a drench in 14 gallons of water ; and
- (ii) as powder mixed dry with the top few inches of soil. Chlordane was applied likewise at the rate of 2.5 grams per 100 square feet. All the treatments gave adequate control against red ants and cutworms. The beds where the chemicals were mixed with the soil gave better results than the drenches, but there was no apparent difference between aldrin and chlordane.

235. Aldrin and endrin were tried as sprays against leaf-eating caterpillars, but without success. A mixed spray of lead arsenate and D.D.T. proved effective against these pests.

236. Work was carried out in cooperation with the Plant Pathologist to compare a new chemical, zineb (65 per cent zinc ethylene bis dithiocarbamate) with established copper fungicides in its effect on the control of damping-off and seedling leaf spot. Pre-sowing treatment with zineb was at a rate of 84 grams per 100 square feet and protective sprays starting two weeks after sowing at a rate of 1 gallon per 100 square feet of a solution prepared with 6 ozs. zineb in 25 gallons of water. Pre-sowing treatment of the control was by Cheshunt compound at a rate of 5 ozs. in 10 gallons water per 100 square feet. Protective sprays of soltosan (copper oxychloride) at normal solutions were used two weeks after sowing. Growth measurements showed zineb to be more effective than the copper compounds. Control of diseases was equally effective with Cheshunt compound, the latter being the only effective chemical in use formerly. Application of zineb is much simpler than of Cheshunt compound.

237. Trials were carried out late in the year to assess the relative values of three soil fumigants: vapam (32.7 per cent sodium methyl dithio-carbamate) was compared with methyl bromide and E.D.B. (ethylene dibromide) which was used as a known treatment. As a split-plot treatment, the fungicidal effects of zineb, Cheshunt compound and copper oxychloride were to be compared. However, there was no incidence of seedbed diseases, so that fungicidal effects were not assessable. The main benefit derived from vapam in the circumstances was as a herbicide. All weeds were controlled with the exception of nut-grass, but it was noted that, since the beds had to be given 10 days interval between treatment and sowing, weed growth started again soon after germination of the tobacco. Methyl bromide however, allows sowing to take place 48 hours after treatment and it was found that very effective weed control, even including nutgrass, was achieved with this chemical applied as a soil fumigant. Vapam is very simple to apply, being sprayed into the bed as a water solution with a watering can. Methyl bromide is applied under a polythene cover; this does involve some capital outlay, but results so far appear to indicate that this may be offset by the effectiveness of the treatment. Suitable precautions, however, must be taken when using methyl bromide, as this is a highly toxic material which should be employed only under expert guidance.

238. The use of cloth covers on seed beds was abandoned during the 1958 crop. It would appear that, with a surface mulch of manure and treatment of the beds with an effective fungicide such as zineb or Cheshunt compound, the tobacco suffers no ill-effect from this practice.

239.—(b) *Fields.* The crops at Richelieu and at Pamplemousses were seriously affected by the cyclonic weather in March-April. The older plantations were a complete loss and the younger ones were affected to varying extents. In all, about 50 per cent of the crop was lost and most of the field trials were invalidated.

240. Treatment with E.D.B. on a field scale was tried and an assessment of eelworm infestation was carried out when the plants were uprooted after harvest. Results, shown as percentage root infection, are tabulated below:—

Percentage eelworm root infection = 10.28				
E.D.B. Treated		Control		Mean
Soil Block	Earth Balls	Soil Blocks	Earth Balls	
12.7	19.7	65.3	31.9	32.4 ± 5.14
Means ...	16.2 ± 7.27	48.6 ± 7.27		

E.D.B. treated plants were significantly less infested than the untreated plants. The leaf from the treated plots was heavier and later maturing than the untreated controls. Similar results were obtained on a planter's tobacco crop at Calebasses.

241. At Pamplémousses, a trial was carried out to assess the comparative effect on yield of four methods of transplanting in the field.

The treatments were :—

T₁ E.D.B. seedbed treatment and pricked on soil blocks.

T₂ E.D.B. seedbed treatment and put in earth balls.

T₃ Untreated plants put in earth balls.

T₄ Direct transplants from E.D.B. treated beds.

Results were :—

Yields (kilos per acre) ± 57.2

T ₁	T ₂	T ₃	T ₄	Mean
728	580	561	583	613 $\pm$ 28.6

242. Differences were not significant at the 5 per cent point. It would appear however that soil blocks can give some increased yield, but the economics of this system require further study. Some work done at Richelieu on these economic aspects gave the following results :—

To raise 3 beds of 100 sq. feet for 1 acre planting material required	...	...	...	...	21 man-days
To prepare 8,000 earth balls for planting 1 acre required	...	...	...	...	10 woman-days
To prepare 7,500 soil blocks for planting 1 acre	...	...	...	...	18 man-days
To plant one acre, depending on type of planting material required	...	...	...	...	6-14 man-days

243. Planting out of the soil block plants was the most expensive, but it was found that, if the soil blocks were transported to the field by tractor, only 8 man-days per acre were required, including the driver.

244. Investigations of varietal resistance to Black Shank disease continued at Richelieu. Some 14 varieties were received from the U.S.A. and Canada and were put under trial. Further seed of resistant varieties was received from the United States Department of Agriculture late in the year for testing next season.

245.—(c) *Seed Production*. 10 kilos of clean mass-selected seed were produced at Richelieu and Pamplémousses and from selected plantations in Black River and Rivière du Rempart. This seed was stored for later issue to growers.

246. A seed cleaning machine, using an electric air blower, gave excellent results and produced well-cleaned seed at a rate of almost 2 kilos per hour. A seed-drying cabinet, using electric light bulbs for heating, was constructed and is capable of drying 1 kilo of seed freshly treated with silver nitrate solution in 3 hours at a temperature not higher than 50°C.

247.—(d) *Curing*. The re-circulation air system in the two barns at Pamplémousses resulted in considerable fuel economy and produced 130 kilos air-cured leaf with only 1 cord of filao firewood, compared with a firewood consumption of 1½ to 2 cords with conventional methods.

248. The steam curing unit at Richelieu was again tried out. Green top-leaf from a grower in Black-River was cured in the steam curing barn, giving leaf valued at Rs 5.18 per kilo, whereas the grower was not able to exceed Rs 4.77 per kilo in his conventional barn.

249.—(e) *Leaf Produced* :—

	kilos	Rs c
Flue-cured Virginian (Pamplémousses)	...	652.2 at 5.77
Flue-cured Virginian (Richelieu)	...	796.0 at 5.66
Flue-cured Amarello (Richelieu)	...	418.8 at 5.74

(3) *Potatoes*

250. Seed of Kerr's Pink received from Kenya was grown at Richelieu. Bacterial wilt incidence was high and the crop suffered from drought effects following a breakdown of the irrigation equipment. Further supplies of seed potatoes became available in September from Australia and a fertilizer trial was laid down using the variety Delaware. The treatment were 3 levels of N, 3 levels of P and 3 levels of K and their interactions. Results confirmed those obtained from previous trials in the series. Nitrogen and phosphate gave significant increases in yield, but potash again gave no response.

251. A small trial was carried out to ascertain whether seed potatoes freshly harvested from the field could be induced to sprout without undergoing the normal period of dormancy. It was found that immersion of cut seed in a $1\frac{1}{2}$ per cent solution of potassium thiocyanate for $1\frac{1}{2}$ hours induced 100 per cent sprouting of the setts within 14 days. Sprouting of untreated setts was almost nil.

(4) *Other Crops*

252. "Victory" and "Pioneer" dwarf beans were grown for seed on the station. Mechanization of this crop was on this occasion further improved by the use of an Albion seed drill for planting and placement of fertilizers. Double rows 6 feet apart with three feet between the double lines proved very efficient and gave ample room for early inter-row weeding by machine. Growth of the plants gave complete ground cover within a short time and weed infestation was negligible.

253. One acre of peas was grown successfully for seed despite severe mildew attack.

254. Five acres of Tsolo maize was planted for seed and harvesting was in progress at the end of the year.

(5) *Mechanization*

255. A new Vineyard Ferguson 35 Tractor was received together with a 36" Rotovator for cane inter-row cultivation. Some observations were made on this equipment, especially on its ability to remove cane stools after final ratooning. Various strengthening alterations were made to the rotovator.

256. A Bentall Disc Ridger was found to be a fast and efficient machine for field ridging and for raising tobacco seedbeds. Other new equipment received included an Arum saw bench, Ferguson reversible discs and a Ferguson springtine cultivator. The latter implement gave excellent results as an inter-row weeder; efficient weeding of maize was carried out at a rate of almost 2 acres per hour.

(6) *Dairy*

257. Disease incidence caused some setbacks in the health of the cattle kept. One cow which reacted to tuberculin was sold for slaughter; two others were disposed of owing to chronic mastitis. By the end of the year health was again good and milk production normal. 2 heifer and 9 bull calves were born during the year. 26,892 litres of milk were produced giving an average daily production of 4.76 litres per cow kept.

258. Maize silage was fed to the cattle in July and August. Average consumption was 20 kilos per cow per day. Of 14,341 kilos of silage produced, silo wastage was only 591 kilos; *i.e.*, less than 4 per cent.

7. *Poultry*

259. On the 25th August unsexed day-old chicks were received from Australia. These included 99 Rhode Island Reds, 80 New Hampshires and 104 Australorps. These birds were used for trials comparing the value of locally compounded feed mixtures with imported feeds, the results of which when complete, will be published elsewhere.

p. 28, 657

XVIII. Plant Pathology

TOBACCO

260. Brown spot (*Alternaria longipes* (Ell. and Ev.) Mason) was investigated, following reports of severe damage in previous years. The disease was first observed this year at Richelieu Experiment Station on the 20th June. Although no more leaves were harvested from the site and the disease was allowed to develop into epidemic form around the initial focus, it spread very slowly. Later, towards the end of the picking season, brown spot was seen in most plantations but in insignificant amounts; in all cases, owing to favourable dry weather conditions, reaping kept ahead of the disease.

261. Frog eye (*Cercospora nicotianae* Ell. and Ev.) occurred widely, particularly in the early months, and caused considerable damage to plantations in the drier parts throughout the year. Damage hitherto attributed to *Alternaria* brown spot was, in fact, caused by the frog-eye leaf spot which this investigation has shown to be the most severe disease of tobacco in Mauritius at present, both from the point of view of attack in the field and that of ensuing barn spots even when field spotting is not considerable. Barn spot was successfully controlled by steam curing at Richelieu Experiment Station.

262. Angular leaf spot (*Pseudomonas angulata* (Fromme and Murray) Stapp.) was observed in some localities on heavily fertilised mature plants.

263. Some tobacco diseases were recorded for the first time in Mauritius, namely Scab (*Septomyxa affinis* (Sherb.) Wallr.) and a disease resembling anthracnose which severely affected winter seedbeds in humid localities; ascochyta leaf spots, caused by *Ascochyta gossypii*, Syd. and *Ascochyta* sp.; shot hole, caused by *Phyllosticta tabaci* Passer and a leaf spot caused by *Phyllosticta* sp. A root disease causing a wilt with a *Fusarium* sp. in association, is under investigation. White root rot caused by *Sclerotium rolfsii* Sacc. and hollow stalk caused probably by *Erwinia carotovora* (Jones) Holland are new host records for these ubiquitous pathogens.

TOMATO

264. Blight (*Phytophthora infestans* (Mont.) de Barry), grey mould (*Cladosporium fulvum* Cooke) and downy mildew (*Leveillula taurica* (Lev.) Arnaud), a new host record for Mauritius, were widespread in tomato plantations. Sleeping disease (*Fusarium bulbigenum* var *Lycopersici* (Brushi.) Wollen w.) occurred in some localities.

265. A virus disease (presumably Tomato single streak virus) severely affected a whole plantation. The disease is characterised by a spotting of the leaves, necrotic lesions on green fruits and dark streaks on stems and petioles.

266. Other tomato diseases recorded for the first time in Mauritius, are grey leaf spot (*Stemphylium solani* Weber), fruit rots (*Phoma destructiva* Plowr.) and the *Stemphylium* form of *Pleospora herbarum* (Fr.) Rabenh.

EGGPLANT

267. Wilt (*Phomopsis vexans* Harter) was reported to be very severe in a plantation.

PELARGONIUM

268. Rust caused by *Puccinia pelagoni zonalis* (Doidge) was destructive in most localities. A leaf spot caused by *Stemphylium solani* Weber was observed on Pelargonium, a new world host record. The fungus has recently been found to attack tomato plants and research is now being undertaken at the request of the Commonwealth Mycological Institute to find out if the Pelargonium fungus is transmissible to tomato.

MISCELLANEOUS DISEASES AND FUNGI

269. All the following were recorded for the first time in Mauritius :—

270. *On Anthurium andreaeanum*.—(a) Shot hole caused by *Pestalotiopsis brevitesa* (Sacc.) Steyaert.
(b) Leaf spot caused by *Phyllosticta* sp.
271. *On Carrot*.—Late blight caused by *Alternaria dauci* (Kuhn) Groves and Skolko.
272. *On Eucalyptus* sp.—A severe leaf spotting caused by *Microdiplodia microsporella* (Sacc.) Allesch.
273. *On Green Pepper*.—Leaf spot caused by *Cercospora unamunoii* Castellani.
274. *On Gypsophila*.—(a) Leaf spot caused by *Septoria gypsophilae* (Died)
(b) Leaf and stem spots caused by *Alternaria tenuissima* (Nees ex Fr.) Wiltshire.
275. *On Hibiscus esculentus*.—Leaf spot. *Cercospora malayensis* Stev. and Solh.
276. *On Hollyhock*.—Leaf spot caused by *Cercospora allthacina* Sacc.
277. *On Hydrangea*.—Powdery mildew caused by *Oidium* sp.
278. *On Mango*.—(a) Leaf spot caused by *Phyllosticta* sp.
(b) Fruit rots caused by *Diplodia natalensis* and *Phomopsis* Sp.
279. *On Oxalis*.—*Ascochyta* sp.
280. *On Pelunia*.—Leaf spot caused by *Cercospora peluniae* (Saito) Muller and Chupp ex Chupp.
281. *On Poppy*.—Powdery Mildew caused by *Oidium* sp.
282. *On Rose*.—Leaf spot caused by *Mycosphaerella rosigena* (Ell. and Ev.) var *madagascariensis* Bourriquet.
283. *On Solanum auriculatum*.—Leaf spots caused by *Phyllosticta hortorum* Speg., and *Phyllosticta* sp. Stev. and Rolden.
284. *On Sweet Potato leaves and stems*.—*Periconia byssoides* Pers. and Schw.
285. *On Tea roots*.—*Xylobotryum dussi* Pet. and *Nectria* sp. (previously recorded as *Sphaerostilbe repens* B. and Br.)
286. *On Tobacco leaves*.—*Helminthosporium rostratum* Drechsler. *Periconia byssoides* Pers. and Schw., *Sporodesmium bakeri*, Syd., and *Pestalotiopsis* sp.
287. *On Strawberry*.—Leaf spot caused by *Dendrophoma obscurans* (Ell. and Ev.)
288. *On Vanilla*.—(a) Leaf spot caused by *Phyllosticta* sp.
(b) Leaf spot caused by *Glomerella vanillae* (Zimm.) Petch.

CHEMICAL CONTROL OF DISEASES

289. Treatment with ethylene dibromide against root knot was carried out in tobacco seed beds with good results when the manure mulch was applied before infection. In the field, experimental application of E.D.B. to the holes has been carried out. Other fumigants, viz. methyl bromide, vapam and mylone are being included in seed bed trials with promising results. The newer products have the advantage of not requiring special application equipment and of controlling diseases and weeds as well as insects and nematodes.

290. The newer fungicides zineb, captan and karathane have been included in preliminary trials for the control of miscellaneous diseases and powdery mildews of tobacco and other crops and have given encouraging results.

PLANT INSPECTION AT THE CUSTOMS AND AIRPORT

291. The control of the importation of plants and plant parts was effected throughout the year as in the past.

XIX. Entomology

PESTS OF THE PIGEON PEA

(*Cajanus indicus* Spr.)

292. Introduction of parasites to control the Cajan pod borers, *Maruca testulalis* Geyer and *Etiella zinckenella* Tr., continued during the year. *Phanerotoma* sp. was received by air from Trinidad and liberated. Introduction of another parasite, *Heterospilus* sp., is still under consideration : it could not be effected as the Commonwealth Institute of Biological Control was unable to obtain this insect from Florida through lack of host material.

293. A survey of pod borer damage was made. The percentage attack was 14 per cent against 60 per cent in the previous year. The cause of this great reduction in infestation cannot be attributed solely to the beneficial effect of the parasites introduced ; cyclonic disturbances early in the year have probably accounted in part for the fall.

294. The imported parasites, *Eiphosoma* (? *annulatum* Cress) and *Bracon cajani* Mues., though scarce after the cyclones, were common later in the year.

The Giant Snail (Achatina fulica Bowditch) and its Predator
(*Lamprophorus tenebrosus* Walker)

295. Seven consignments of larvae of *Lamprophorus tenebrosus* Walker were received from the Department of Agriculture, Ceylon and liberated in various regions of the Island. Two months after the last release a number of larvae were recovered. Subsequent surveys, however, yielded negative results.

FRUIT FLIES

296. *Ceralilis rosa* Karsch is still a most troublesome pest, though reports have been received from various localities of a marked reduction in its attacks.

297. Parasite introductions from Hawaii were accelerated and 56,000 adults of the following species were liberated :—

<i>Opius oophilus</i> Silv.	...	...	...	10,600
<i>Opius longicaudatus</i> Full (several varieties)	...	...	...	2,000
<i>Syntomosphyrum indicum</i> Silv.	...	...	...	900
<i>Dacnusa giffardii</i> Silv.	...	...	...	22,500

The total number of parasites liberated since 1957 is 82,000.

298. In addition to *Syntomosphyrum indicum* Silv. received last year, another species, *Opius oophilus* Silv., has been found breeding on *C. rosa* Karsch on loquats.

299. A new fruit fly, *Pardalaspis cyanescens* Bezzi, was recorded last October on tomato. It is a serious threat to this crop. In spite of vigilance exercised under Proclamation 22 of 1953, which prohibits tomato introductions from Reunion and Madagascar where *Pardalaspis cyanescens* already exists, this fruit fly gained entry and established itself over a large area in the northern and western regions. Parasite introduction from Madagascar is under study ; it is hoped also that the introduction of fruit fly parasites from Hawaii will help to control this new pest.

300. Work on the control of fruit flies with insecticides is in progress : dipterex, malathion, sodium silicofluoride and D.D.T. are at present recommended against these pests, the first three in bait sprays especially. When using dipterex (wetable powder) at the rate of 0.2 per cent active ingredient in sprays and 0.6 per cent in bait sprays, infestation dropped from 80 per cent to 10 per cent after 4 treatments at weekly intervals.

301. Malathion and sodium silicofluoride are most useful against *C. rosa*. In one locality the percentage attack on peaches dropped to 40 per cent, as compared to 100 per cent in untreated neighbouring orchards, after weekly bait sprays with sodium silicofluoride. D.D.T. is used on a large scale in Reunion with some success at the rate of 0.6–0.7 per cent active ingredient.

PESTS OF TEA

302. The survey of the various pests of tea was continued. Following a dry spell during the period August–November the phytophagous mites : *Hemitarsonemus latus* Banks and *Brevipalpus phoenicis* Geijskes were abundant in the upland regions. Subsequent heavy showers kept these mites down to a negligible level.

THE COCONUT BEETLE : *Oryctes rhinoceros* L.

303. Following reports of severe damage by this beetle on the coconut palm in Diégo Garcia, a dependency of Mauritius, the Assistant Entomologist visited that Island last October to assess damage and make recommendations for the control of this pest. The scoliid wasp, *Scolia ruficornis* F., introduced in 1951 from Zanzibar, was active, but in insufficient numbers to check the damage. A report of this visit has been submitted. The Commonwealth Institute of Biological Control has also been approached regarding the possible introduction of other parasites and predators of this dangerous pest.

Stomoxys nigra Macq.

304. At the request of the Mauritius Government a preliminary investigation sponsored by the Commonwealth Development and Welfare Fund was started in the Island by Mr. H.C.M. Parr—Biting fly Research Officer, Entebbe, Uganda—during the month of January 1958. The report on this investigation was received during the year, but from the nature of the recommendations made no further action could be taken for the time being. Results of a similar investigation in Uganda by a team of research workers engaged on the same problem are awaited.

MISCELLANEOUS

305. As a result of cyclonic disturbances early in the year, many parasites were scarce in the field and their hosts were found in considerable numbers on various crops, causing in most cases damage necessitating insecticidal control measures. The most important pests were —

<i>Pests</i>		<i>Hosts</i>	<i>Insecticide used or recommended</i>	<i>Result of Insecticide control</i>
<i>Spodoptera mauritia</i> Boisd.	...	Tobacco Potato ...	D.D.T. and Aldrin ...	Successful
<i>Agrotis ipsilon</i> Hf.	...	Tobacco, potato and leguminous plants	D.D.T. and Aldrin ...	Successful
<i>Luferodes quaternus</i> Fairm.	...	Bean plants ...	D.D.T. spray ...	Successful
<i>Nacoleia praeteritalis</i> Wlk.	...	Bean and other legu- minous plants	D.D.T. ...	Successful
<i>Heliothis armigera</i> Hb.	...	Tobacco and Tomato	D.D.T. Dipterex ...	Successful

306. One consignment of *Tiphia paralella* Sauss was sent by air to Hawaii at the request of the Territorial Entomologist. 104 females arrived in good condition out of 122 sent.

307. Trials with chlordane and dipterex against the cecidomyiid fly on mango : *Procontarina malteina* Keiffer and Cecconi were carried out. Monthly sprayings with 0.5 per cent chlordane and 0.2 per cent dipterex with agral at the rate of 5 c.c. in 10 litres gave almost complete protection of young plants. Other experiments to control the mango gall midge are in progress and work on its parasites has just started.

308. Joint experiments with the Agronomist at Richelieu Experiment Station were carried out on the control of *Tetranychus marianae* Mc. G on *Solanum melongena* L. (the egg plant). A combined weekly treatment of the systemic insecticide rogor and P.P. Ovicide proved effective.

309. Exhibits of the commoner insect pests were made at Rivière des Anguilles, Triolet Social Centre and at Curepipe Experiment Station.

310. The Entomologist delivered lectures to small planters at the Triolet Centre during the December Agricultural week and gave broadcast talks on the control of fruit flies. A number of press releases were issued on the tomato fruit fly.

311. The Entomologist served on the Granary Committee. Regular inspections were made at the Tobacco Warehouse and advice on control of *Lasioderma serricorne* F. was given. Numerous visits were paid by Officers of the Division of Entomology to planters and recommendations made on control measures of various insect pests.

312. Lectures in Agricultural Entomology were delivered at the College of Agriculture by the Entomologist to 2nd. Year students.

XX. Agricultural Chemistry

MODIFICATIONS

313. In April the Chemistry Division moved to new premises formerly occupied by the Sugarcane Research Station. The modernisation and enlargement of the laboratory was still in progress at the end of the year.

ANALYSES

314. During the year 800 samples were analysed, involving more than 1,300 determinations, an appreciable increase over the preceding year.

315. *Fertilizers* : 60 samples of simple and compound fertilizers were analysed for their content of nitrogen, phosphoric acid and potash.

316.—*Water* : 9 samples of drinking water and boiler feed water were analysed. Boiler feed water was found in general to be high in silica content.

317. The periodical check of fish pond water was continued, 160 samples being analysed. No correlation was found between pH and calcium content. This fact led to the determination of the lime requirement of the water at various times.

318. *Foodstuffs*.—Samples forwarded by the Livestock Feed Factory and the Livestock Division were analysed for the purpose of ration blending. Imported poultry feeds and those prepared by the Livestock Feed Factory were analysed for purposes of comparison.

319. *Fodder*.—About 300 samples of fodder were analysed for their dry matter and protein contents.

MISCELLANEOUS

320. *Tobacco*.—With the co-operation of the Agronomist, pot experiments were started for the reproduction of deficiency symptoms of nitrogen, phosphorus and potassium on tobacco plants. As a first trial, the plants were grown in drums in previously washed soil. Trace elements were applied. There was a positive response to nitrogen. Potassium and phosphorus deficiencies did not show up at that stage. The experiment is being repeated under the same conditions.

321. *Milk*.—Analysis of milk from the experiment stations was resumed as from October. 166 samples were analysed for fat content.

322. *Sugar Products*.—The analysis of molasses and alcohol for export was carried out regularly on the same lines as in previous years.

323. *Lime*.—Analyses were also made of the types of lime manufactured locally for use in building works, sugar manufacture and as a supplier of calcium for crop plants.

XXI. Agricultural Engineering

GENERAL

324. With the arrival in January 1958 of the Supernumerary Agricultural Engineer, the organisation of the Engineering Division was reviewed and the division resumed its activities. The objectives of the division are :—

- (a) The servicing of departmental tractors, vehicles and agricultural machinery ;
- (b) The control of building work undertaken directly by the Department of Agriculture ;
- (c) Testing under local conditions of agricultural machinery with a view to ascertaining optimum working conditions and to effect modifications if necessary ;
- (d) General advisory and educational work on agricultural engineering questions ;
- (e) The management of the Livestock Feed Factory and Yeast Factory.

325. It has not yet been possible fully to achieve these objectives, as the division is still in the early stages of development.

SERVICING OF AGRICULTURAL MACHINERY AND DEPARTMENT VEHICLES

326. The preparation of a complete recording and servicing system for vehicles, tractors and machinery was given priority. Comprehensive records were started, and an overall system of preventive maintenance prepared. Service schedules were prepared for all equipment, and a standardized lubrication system was evolved. All vehicles were required to be sent to the Central Workshop at fixed intervals for comprehensive servicing and checking. Intermediate services were carried out by the drivers in charge of the vehicles concerned. Pending provision of proper repair facilities, a temporary workshop was established at the Livestock Feed Factory, Richelieu in July and financial arrangements were made to ensure that spares and lubricants were readily available at the workshop.

327. Since the commencement of work at the Temporary Central Workshop the following services have been carried out :—

Tractors	20
Vehicles	21
Other Machinery	13
TOTAL	54

328. Plans are in hand for the erection in 1959, under the Capital Development Programme, of the permanent Central Workshop with ancillary buildings.

Control of Departmental Building Work

329. Work during the year mainly concerned the Livestock Division. Plans and estimates of costs and materials were prepared and submitted for the Curepipe piggery, the Reduit poultry scheme and deep litter house, divisional office and laboratory and improvements at the various stations of the Livestock Division. Frequent control checks were made at those building sites. Minor building works were undertaken for the other divisions of the Department.

Advisory Work

330. The Division was consulted and provided preliminary data for the erection at Port Louis, under Government's Development Plan, of a large central cold store.

331. Steps are being taken for all indents placed for departmental machinery and spares to be first checked and for equipment received to be inspected and assembled by the Division in order to facilitate delivery and subsequent servicing.

Livestock Feed Factory

332. The Maize Mill was renamed Livestock Feed Factory and continued the manufacture of special mixtures for poultry, cattle, pigs and horses. Ureated molasses feed was also prepared from bagasse, molasses and urea as a very cheap feed for ruminants.

333. A special effort was made to popularise the use of cow feed and, to that effect, a cheap mixture in loose and cube form was marketed. A scheme for the wider distribution of this mixture was studied.

344. 1,018 tons of stock feed were manufactured and 1,034 tons sold. The Rose Hill Extension Shop operated satisfactorily throughout the year.

Manufacture of Yeast Tablets

335. The manufacture of yeast tablets from yeast powder imported from South Africa was continued ; 12,660,000 tablets were made. 12,674,000 tablets were sold to Government departments, 195,500 to the public.

Manufacturing Accounts

336. The annual statement of accounts is given at Appendix E.

XXII. Fisheries ***FRESH WATER FISHERIES***Development*

337. At Curepipe Experiment Station seven small ponds were constructed to increase breeding capacity and to give greater flexibility in handling fry. In addition, a header reservoir was built on the upper part of the station to give some reserve of water for drought periods. Considerable improvements were made to water distribution channels which gave a much better water control on all ponds.

Investigation

338. *Tilapia zillii* continued to show extreme fecundity and it was decided in June to destroy the species. *T. melanopleura* is inclined to be a prolific breeder, but has a great advantage in being capable of eating large quantities of green food. Thus ponds are kept free from weed growth by this species. It is, therefore, desirable to use 10 per cent of *T. melanopleura* in each pond purely for ponds clearing, the remaining 90 per cent of stocking being with species giving better yields of marketable fish.

339. In general, it has been found most productive for fertilizers and manure to be worked into the bottom of the pond before filling with water. This method gave a good growth of algae and effects persisted longer than when surface applications were made. If the ponds are drained, fertilized and restocked twice a year, then it is likely that bottom working and dressing will be sufficient to provide food for the fish throughout the growing period. The standard dressing in use at Curepipe per acre of pond surface is :—

600 lb. lime
200 lb. superphosphate
200 lb. sulphate of ammonia
100 lb. sulphate of potash
10 tons manure

340. Results in this year's trials appear to indicate that even higher dressings may be advantageous.

341. A special study was made of the relationship of pH, alkalinity, and calcium content of the pond water as affecting productivity. This work was carried out with the co-operation of the Chemistry Division. It would appear from the data obtained that pH is of no value in assessing the lime requirements of a pond. Even where pH was well above neutrality (pH 8.0 or 9.0), calcium content was found to be very low.

342. Following the above investigations, addition of heavy dressings of slaked lime gave considerable increase in the calcium content of the water and this was also reflected in the alkalinity titrations. pH of the water showed very little change. After some 2-3 months calcium content declined rapidly, the cause of which is as yet undetermined. Further investigations are in progress on this rather complex problem.

XXIII. Rodrigues

343. The annual report for 1957 detailed the objects of the agricultural development plan. At the close of 1958 satisfactory progress had been made and no major alteration in the design of the plan was shown to be necessary. The acceptance by the population of the new principles of farming which the Department is trying to extend was most encouraging and the feeling is that an enthusiasm for the new methods will grow from strength to strength.

344. The position at the end of the year in regard to the Department's major projects in Rodrigues is given below under the appropriate headings.

* Marine Fisheries are the subject of a separate Annual Report issued by the Fisheries Division.

EXPERIMENTAL AND DEMONSTRATION PLOTS

345. These ten demonstration unit farms established in the agricultural uplands are regularly observed and often visited by local farmers. Each farm now carries a cow in a pen in order to demonstrate the production of manure and milk by feeding the cow with elephant grass and acacia produced on the unit farm itself. The stall feeding of a milk cow on a farm is an innovation in Rodrigues ; the general practice being to keep all cows on the low lying coastal Cattle Walk and head load manure up to the hills from the coastal cattle kraals. However, the demonstration of stall feeding with elephant grass and acacia is being accepted and is becoming popular. Numerous farmers have built suitable cow stalls on their farms. During 1959 the Government Breeding Centres will back up this movement by providing the small farmer with good Creole milk cows at reasonable prices. The farmers are keen to get the cows because they can get cash daily from their milk sales and the manure is readily available for their crop land.

246. The demonstration farms have now been in existence for 3 years and already the conservation farming which is practised on them is showing beneficial effects which are so obvious that the most casual observer cannot avoid appreciating them.

LIVESTOCK BREEDING CENTRES

347. The Breeding Centres at Oyster Bay, Le Chou, St. Gabriel and Baie Topaze were structurally completed, adequate fodder was planted around them and they were partly stocked with animals. The distribution of animals was as follows :—

		Oyster Bay	Le Chou	St. Gabriel	Baie Topaze	Demonstration Plots	Sold to farmers	Sold by auction	Deaths	Living
Creole Cows	...	12	19	13	7	3	—	—	2	52
Local Cows	...	—	—	—	—	6	—	—	—	6
Calves	...	3	6	13	1	1	—	—	4	20
Bulls	...	1	1	1	—	—	—	—	—	3
Berkshire Sows	...	6	—	—	—	—	—	—	—	6
Berkshire Boars	...	1	—	1	1	1	—	—	—	4
Local Sows	...	3	—	—	—	1	—	—	—	4
Piglets	...	44	—	—	—	—	11	7	7	44
Sheep	...	20	—	—	—	30	—	7	15	50
Goats	...	76	—	—	—	—	16	9	14	76

348. The Breeding Centres at Malabar and Marechal are under construction and will be completed by the middle of 1959. Further purchases and shipment of Creole Cows is awaited from Mauritius to bring up the stocking of each centre to 34 cows and fallowers. Pigs will also be bred and reared at Le Chou, St. Gabriel and Baie Topaze Breeding Centres.

349. It was decided that the policy of the Breeding Centres will be to provide the farmer with a milk cow, or weaned pigs for fattening, or young goats for fattening. The Rodriguan farmer is not yet adequately equipped with capital, stock housing, fertile land, or veterinary services for him to undertake the difficult task of breeding and rearing farm animals to the milking or fattening stage. The Breeding Centres operated initially by Government will do this delicate work and the farmer will fatten animals and produce the island's milk supply.

350. The "milk cow farmer" will be allocated a cow which has started its second lactation and whose value will be Rs 300. The farmer will buy this cow on a deposit followed by a "milk purchase" method whereby he

returns the cow's milk to the Breeding Centre until such time as the receipts for milk have covered his debt. Ultimately, a Government or cooperative dairy will take all locally produced milk for distribution to Schools and retailers may produce products such as ghee and butter. The value of the cow to the farmer lies in the daily cash income from milk sales, manure for his land and an easy gain of capital wealth. The calves produced on the farmers' farms must be purchased by the Breeding Centres for rearing or veal production. When and if the veal market is developed, the milk cow farmer might well exploit it himself.

351. For the "pig fattening farmer" the Breeding Centres breed and rear to 50 lb. live weight (age 100 days) pure bred Berkshire pigs which are sold to him to fatten to about 150 to 200 lb. weight (age 200 days). During the year, trials were conducted on the rearing of piglets and results showed that, by supplementing the sow's milk with 1 lb. of cow milk per piglet per day and feeding a ration of ground maize, boiled cornflour, local blood meal and local salt fish from 1 month after farrowing and weaning at 2 months, the following weight for age table could be realised :—

Age	Birth	1 mth	1½ mths	2 mths	2½ mths	3 mths	3½ mths
Weight (Eng. lb.) ...	2.3	10	15	23	30	40	55

The young pig of 3 to 3½ months weighing 40 to 50 lb. is an ideal animal for rapid fattening by the Rodriguan farmer.

352. In the case of goats, the object is to encourage the production of good meat animals for the Mauritius market. The advice to fatten in pens also compensates for and assists the policy of legislative control of goats on free range which is now in force. The Oyster Bay Centre breeds and rears goats to an age of 4 months, live weight 40 lb., and then the farmer buys and fattens to a weight of 80 lb. at an age of 8 months. Trials on the rearing of kids showed that weaning at 16 weeks was suitable, provided the mother's milk was supplemented by cow's milk to give a minimum ration of 2 lb. of milk per day. Weight for age records were kept for many kids and the average which can be reasonably expected in the future is :—

Age	Birth	15 dys	1 mth	1½ mths	2 mths	2½ mths	3 mths	3½ mths	4 mths
Weight (Eng. lb.) ...	5	7	10	15	20	25	30	35	40

353. Milk and kid production records were kept during the year on 10 she-goats. The expected average production per year per nanny is 5.6+ kids and 603.36 lb. of milk.

354. Total milk produced at each Breeding Centre during 1958 in English pounds was :—

	lb
Oyster Bay	11,039½
Baie Topaze	2,164
St. Gabriel	32,389½
Le Chou	14,377½
TOTAL	59,970½

LIVESTOCK AND HORSES

355. During the year 54 cows and 3 bulls were imported from Mauritius for the stocking of the newly developed Breeding Centres.

SWAMP RICE SCHEMES

356. Towards the end of the year work was in progress on the development of the Oyster Bay alluvial flat into rice and vegetable plots. The land is being cleared, terraced, flattened and irrigated. The Government Rice Mill hulled 16,025 lb. of paddy during the year.

SOIL AND WATER CONSERVATION

357. At the end of the year 520 unit farms had been canalised, tie ridged and leased out to local farmers. Two large water storage dams and 6 smaller dams had been completed and two more were nearing completion. About 5,000 yards of irrigation pipes and canals have been laid and 14,000 yards of interception storm canals have been excavated.

SURVEY OF CROWN LANDS

358. All the unit farms which have been leased have been demarcated with boundary stones and vetivert lines planted along the boundaries. About 400 acres of these farms have been accurately mapped by a Surveyor.

MACHINERY AND EQUIPMENT

359. A Bental Wizard Hammer Mill and a Mica Groundnut Oil Crusher and Expeller operated by electric motors powered by a Lister Generator (3 phase 225-450 V) have been installed at Citronelle. Delivery of a small rice huller that can be operated from the same generator is also awaited. The initial tests of the Mica Oil Mill were satisfactory and a service of oil extraction was opened to the public in September. By the end of the year 902½ lb. of unshelled nuts had been processed producing 208 lb. of oil and 651 lb. of groundnut cake. Much interest has been shown in this oil production project, as purchase of cooking oil is a big item in the family budget and it is anticipated that many growers will send nuts for processing after the next harvest.

REAFFORESTATION

360. In cooperation with the Forestry Department, work was continued on the planting of hill crests and steep slopes in the Cattle Walk. A start was also made on shade tree planting in the grazing areas of the Cattle Walk. About 800 stone gabions were built at 50 ft. by 50 ft. spacing and nursery activities started for the production of planting material.

XXIV. Lesser Dependencies

361. Copra production continued to be the main industry in the Chagos and Agalega islands. Most of this is exported to Mauritius for manufacture into edible oil, soap stock and poonac.

362. Yields of copra and coconuts over the last three years are tabulated below :—

<i>Metric tons copra :—</i>		1955-56	1956-57	1957-58
Diego Garcia	...	636	570	497
Peros Banhos	...	469	458	455
Salomon	...	265	267	260
Chagos Archipelago ...	...	1,370	1,295	1,212
North Island	...	181	153	118
South Island	...	256	240	211
Agalega Islands	...	437	393	329
<i>Coconuts, number :—</i>				
Diego Garcia	...	5,472,000	4,660,000	4,381,000
Peros Banhos	...	4,010,000	3,802,000	3,802,000
Salomon	...	2,172,000	2,174,000	2,092,000
Chagos Archipelago ...	...	11,654,000	10,636,000	10,275,000
North Island	...	1,643,000	1,193,000	1,208,000
South Island	...	2,439,000	2,329,000	1,750,000
Agalega Islands	...	4,082,000	3,522,000	2,958,000

363. Yields of nuts and copra are very low and a considerable amount of rehabilitation work is required.

364. Results from Agalega have been disappointing, mainly because of adverse climatic conditions. There are considerable areas of young cultivation to come into bearing in North Island and, provided always that cyclonic damage does not intervene, production may be expected to increase in Agalega over the next few years.

365. In Diego Garcia the position is critical owing to severe damage to the palms by a massive infestation of Rhinoceros Beetle. Production has been reduced by over 1 million nuts in the past three years and is likely to continue to decline unless this pest can be brought under control.

366. The Assistant Entomologist was sent to Diego Garcia in October. His report and recommendations have been conveyed to Diego Ltd. and the Department is taking steps to introduce possible parasites and predators of the Rhinoceros Beetle.

367. Arrangements are in hand for the Director of Agriculture to visit the Chagos and Agalega islands early next year to advise and report on the coconut industry of these islands, the economic future of which is causing anxiety.

XXV. General

VISITS

368. Her Majesty Queen Elizabeth, the Queen Mother visited the Royal Botanic Gardens at Pamplémousses on the 8th March in company with His Excellency the Governor and the acting Director of Agriculture. Her Majesty was able to see the commemorative tree which had been planted in 1956 by Her Royal Highness the Princess Margaret.

369. Overseas visitors to the Department during the year included :—

M. Romain Couilloux, President of the *Fédération des Syndicats Agricoles* of Reunion and representative of the *Etablissements St. Gobain* of France ;

General Bureau from Morocco ;

Mr. H.C.M. Parr, Entomologist of the Animal Health Research Centre, Uganda ;

M. Lalanne, Inspector-General of Veterinary Services in Madagascar ;

Dr. A. Ginsberg of the Department of Veterinary Services, Kenya ;

M. Roger Benoit of the *Services Agricoles* of Reunion ;

Mr. W. J. Jackson of the Bank of England ;

A trade mission from New Zealand ;

Mr. L. Farrar-Brown of the Nuffield Foundation ;

Mr. Stewart of Messrs. Fisons Ltd.,

Dr. Van Hook of the Holy Cross College, Massachusetts ;

Mr. Megginson of Messrs. Nuwara Eliya Tea Estates Co. Ltd., London ;

M. R. Genest, *Président-Directeur, Caisse Régionale de Crédit Agricole Mutuel de la Réunion* ;

M. Lucien Pompon, *Directeur des Services Financiers de la Caisse Nationale de Crédit Agricole, Paris* ;

The delegates of Reunion and Madagascar to the *Comité de Collaboration Agricole Maurice—Réunion—Madagascar* ;

Mr. Robertson of the Colonial Office ;

M. J. Breniere, Entomologist of the *Institute des Recherches Agronomiques, Madagascar*.

370. His Excellency the Governor visited the livestock breeding stations in December, while the Minister inspected the experiment stations, extension services and land settlements on various occasions.

MISSIONS

371. The Director of Agriculture, while on leave, accompanied representatives of the Reunion sugar industry on a visit to sugar estates and distilleries in the islands of Barbados and Trinidad. This mission was carried out during March under the auspices of the *Comité de Collaboration Agricole Maurice—Réunion—Madagascar*. In May, he subsequently attended the International Agricultural Machinery and Equipment Exhibitions in Brussels.

372. The Plant Pathologist visited Madagascar in February to see the organisation of work for the control of Fiji Disease and to inspect the Mallet Disinsectisation Plant at Tamatave. He also visited Reunion in October to advise on control of cane diseases.

373. The Assistant Entomologist visited Diégo Garcia in October to advise on control of the Rhinoceros Beetle.

MISCELLANEOUS

374. In June, a sugar congress was organised by the *Société de Technologie Agricole et Sucrière*. This was attended by delegates from Réunion, Madagascar and South Africa.

375. An "agricultural week" was held at Triolet in December and the Curepipe Experiment Station was open to the public on the 20th December.

376. On the 22nd December, at the Curepipe Experiment Station two pairs of black swans were presented to His Excellency the Governor by the Australian Trade Representative on behalf of the State of Western Australia. These birds are being kept at the Curepipe Experiment Station pending arrangements to transfer them to the Royal Botanic Gardens.

APPENDICES

A. Staff

(as at 31st December)

Appointment	Name	Remarks
Director of Agriculture ...	M. N. Lucie-Smith M.A., B.Sc. Agr. (Lond.), Dip. Agr. (Wye), D.I.C.T.A. (Trinidad)	On leave to 5.8.58
Deputy Directors ...	G.A. North Coombes, O.B.E. B. Sc. Agr. (Read.), Dip. Agr. (Maur.). M.D. French-Mullen, D.I.C.T.A., A.I.C.T.A.	Acting Director to 6.8.58 Appointed 15.12.58, but not yet assumed duty

ADMINISTRATIVE AND FINANCE DIVISIONS

Chief Finance Officer ...	I. Félix
Chief Executive Officer ...	L.O. René

In addition there are :

- 3 Senior Executive Officers—1 vacancy
- 4 Executive Officers
- 2 Higher Clerical Officers
- 11 Clerical Officers
- 1 Confidential Assistant—vacant
- 6 Typist Stenographers

AGRICULTURAL DIVISION

Senior Agricultural Officers	L. Johnson, B. Sc. Hons. (Leeds) A. D'Emmerez de Charmoy, M.B.E. Dip. Agr. (Maur.)	On leave 14.8.58
Agronomists ...	L.A. Suzor, Dip. Agr. (Maur.) K. Lutchmeenaraidoo, B. Sc. Agr. (Read.), Dip. Agr. (Maur.)	Appointed 4.11.58
Horticulturist ...	J.H. Julien, Dip. Agr. (Maur.)	
Agricultural Officers ...	G. Bauristhène, Dip. Agr. (Maur.) P. Regnard L. Moorlee, Dip. Agr. (Maur.) J. Duhamel, Dip. Agr. (Maur.) J. Marot I. Fakim, Dip. Agr. (Maur.) M. Sooltangos, Dip. Agr. (Maur.) 1 vacancy	Is also Super- intendent of Schools Returned from study leave 13.1.58 On pre-retire- ment leave 1.12.58

Appointment	Name	Remarks
In addition there are :—		
13 Assistant Agricultural Officers—1 vacancy		
1 Surveyor		
1 Assistant Surveyor		
8 Overseers Grade I		
6 Overseers Grade II		
AGRICULTURAL CHEMISTRY DIVISION		
Chemist	S. Belcourt, B.Sc., Dip. Agr. Sc. (Wales), Dip. Agr. (Maur.)	
Assistant Chemist	F. Berchon, Dip. Agr. (Maur.)	
In addition there are :—		
3 Scientific Assistants—1 temporary		
PLANT PATHOLOGY DIVISION		
Plant Pathologist	L. Orieux, B.Sc. (Lond.), D.I.C.	Appointed 1.2.58
Assistant Plant Pathologist	S. Félix, Dip. Agr. (Maur.) ...	Appointed 12.5.58
In addition there are :—		
1 Plant Inspector—Vacant		
1 Scientific Assistant		
CENTRAL BOARD DIVISION		
Registrar	S. Staub, A.R.T.C. (Glas.), A.M.I. Mech. E., Dip. Agr. (Maur.)	Acting Deputy Director of Agriculture
Assistant Registrar and Chief Chemist	P. J. Galea, Dip. Agr. (Maur.)	Acting Registrar
Accountant	J. G. Gnany, A.A.C.C.A.	
Assistant Chemist	R. Thelemague, Dip. Agr. (Maur.)	
In addition there are :—		
1 Investigational Officer and Weighbridge Inspector		
3 Senior Test Chemists		
26 Test Chemists (crop only)		
26 Samplers (crop only)		
AGRICULTURAL COLLEGE DIVISION		
Principal	J. R. Lagesse, B.Sc. (Lond.)...	On leave 17.4 to 29.6.58
Lecturers	R. Latulipe, B.Sc. (Lond.) ...	Acting Principal 18.4 to 29.6.58
	A. E. Rouillard, M.S. (Louis)	Resigned on 1.2.58
	B. Roy, B.Sc. Agr. (Wales) Dip. Agr. (Maur.)	
Assistant Lecturers and Laboratory Demonstrators	P. Guerandel, Dip. Agr. (Maur.) R. Burrenchobay, B.Sc. (Edin.) K. Lutchmeenaraidoo, B.Sc. Agr. (Reading), Dip. Agr. (Maur.)	On Contract Appointed Agronomist 4.11.58

ENGINEERING DIVISION

Appointment	Name	Remarks
Agricultural Engineer ...	E. Limfat, B.Sc. (Lond.) A.C.G.I., A.M.I. Chem. E.	Returned from Study leave on 28.8.58
Supernumerary Agricultural Engineer	W. Smith, N.D.A., C.D.A. D.T.A.	Appointed 1.1.58. As- sumed duty 3.3.58—on 3 year contract
Assistant Agricultural Engineer	Vacant	

In addition there are :—

1 Scientific Assistant

1 Supervisor, Yeast Factory and Maize Mill

ENTOMOLOGICAL DIVISION

Entomologist ...	A. Moutia, Dip. Agr. (Maur.) F.R.E.S.	
Assistant Entomologist ...	J. E. A. Orian, B.Sc., F.R.E.S., F.Z.S., Dip. Agr. (Maur.) R.A.C.	

In addition there is :—

1 Scientific Assistant

LIVESTOCK DIVISION

Senior Veterinary Officer ...	A. Darné, F.R.C.V.S., Dip. Agr. (Maur.)	On leave to 22.3.58
Veterinary Officer ...	J. U. D. Shuja, M.R.C.V.S. ...	Acting Senior Veterinary Officer to 22.3.58
Veterinary Officer ...	S. Lionnet, B.V.S., M.R.C.V.S., Dip. Agr. (Maur.)	
Animal Husbandry Officer	I. H. Proverbs, B.Sc., Agr., Animal Husbandry, M.Sc., (Nutrition)	On secondment from Nyasa- land from 31.8.57
Laboratory Technologist ...	L. Webb, Dip. Bio. (Lond.) A.I.M.L.T. (Lond.) M.I.B. (Lond.)	On leave 27.4 to 20.9.58
Senior Stock Inspectors ...	W. Haddon C. Delaitre	— Acting Animal Husbandry Officer 15.6.58

In addition there are :—

1 Scientific Assistant

13 Stock Inspectors ... 1 returned from
study leave
on 14.8.58

1 vacancy

20 Livestock Assistants ... 1 vacancy

TEA DIVISION

Appointment	Name	Remarks
Tea Officer	R. B. J. Deane	On leave to 16.7.58
Assistant Tea Officer ...	D. N. Andrews	Acting Tea Officer to 16.7.58
Agricultural Officer ...	A. Baissac, Dip. Agr. (Maur.)	Acting Assistant Tea Officer 16.7.58. On leave 31.7.58

In addition there are :—

- 2 Assistant Agricultural Officers
- 1 Manager, Midlands Estate
- 5 Overseers Grade II

RODRIGUES DIVISION

Senior Agricultural Officer	P.L. Hotchin, B.Sc. Agr. (Leeds) D.T.A. (Trinidad)	
Agricultural Officer ...	C.M. Courtois, Dip. Agr. (Maur.)	Appointed Assistant Entomologist Health Department 15.12.58.
	A.E. Farla	appointed 15.12.58.

In addition there are :—

- 2 Assistant Agricultural Officers
- 1 Stock Inspector Vacant
- 1 Overseer, Grade I Vacant
- 8 Overseers, Grade II

FISHERIES DIVISION

Fisheries Officer	J. de B. Baissac, R.A.C. ...	On leave from 31.3.58 to 19.9.58
Chief Inspector	J. Monplé	Ag. Fisheries Officer 1.4.58 to 19.9.58

In addition there are :—

- 3 Inspectors
- 3 Sub-Inspectors
- 16 Head Guards
- 36 Guards

ADDENDUM

Appendix B page 55

BOARD OF AGRICULTURE, FISHERIES AND NATURAL RESOURCES
REPRESENTATIVES OF MILLERS

Dr. P. O. Wiehé, C.B.E.

Mr. Robert de Spéville.

B. Composition of the Principal Boards and Committees**(i) BOARD OF AGRICULTURE, FISHERIES AND NATURAL RESOURCES***Ex-officio Members*The Director of Agriculture—*Chairman*The Conservator of Forests—*Vice-Chairman*

The Deputy Financial Secretary (Economics)

Representative of the Chamber of Agriculture

Mr. L. H. Garthwaite

Representatives of Planters

Mr. Maurice Martin

Mr. Hassam Nazroo

Members of the Legislative Council

The Honourable S. Boolell

The Honourable A. L. Nairac, C.B.E., Q.C.

The Honourable J. N. Roy

Dr. the Honourable L. R. Chaperon

The Board held four meetings during the year.

(ii) AGRICULTURAL COLLEGE ADVISORY BOARDThe Director of Agriculture—*Chairman**Nominated by His Excellency the Governor*

The Honourable F. S. Chadien, M.L.C.

Dr. P. O. Wiehé

The Honourable S. Boolell, M.L.C.

Nominated by the Chamber of Agriculture

Mr. L. Baissac, M.B.E.

Mr. R. Hein, Q.C., Chevalier de la Légion d'Honneur

Nominated by the 'Société de Technologie Agricole et Sucrière'

Mr. René Leclézio

Mr. P. de Sornay, Officier de la Légion d'Honneur

Nominated by the Association of Former Agricultural Students

Mr. René Noël.

The Board held eight meetings during the year.

(iii) CENTRAL BOARDMr. M. Rault, District Magistrate—*Chairman*.

Mr. Maxime Rey

Mr. F. North Coombes } *Millers' Representatives*

Mr. Roland Ducler des Rauches

Mr. Jascaran Dookun

Mr. R. Burrenchobay, M.B.E.

Mr. J. Chundunsing

} *Large Planters' Representatives*} *Small Planters' Representatives*

The Board held thirty-seven meetings during the year.

(iv) TOBACCO BOARD

Ex-Officio Members

The Director of Agriculture—*Chairman*.

The Commissioner of Excise—*Vice-Chairman*.

The Accountant General or any officer of his Department deputed by him.

The Agronomist or any officer of the Department of Agriculture nominated by the Director of Agriculture.

The Manager, Tobacco Warehouse.

Appointed by His Excellency the Governor

The Manager of the British American Tobacco Co. (Mauritius) Ltd., or his representative.

Mr. A. G. Rey.

Mr. D. Sewraz.

Mr. R. Ducler des Rauches.

Mr. A. Furreed.

The Board held thirteen meetings during the year.

(v) LAND SETTLEMENT ADVISORY COMMITTEE

The Senior Deputy Director of Agriculture—*Chairman*

The Civil Commissioner (North)

The Civil Commissioner (South)

The Civil Commissioner (Moka-Flacq)

The Civil Commissioner (Plaines Wilhems-Black River)

The Registrar of Co-operative Societies

The Senior Agricultural Officer i/c Extension Service

The Honourable A. Beejadhur, M.L.C.

The Honourable S. Boolell, M.L.C.

The Committee held four meetings during the year.

(vi) TEA COMMITTEE

The Controller of the Tea Industry (Director of Agriculture)—*Chairman*

Consumers' Representatives

The Honourable F. Laventure, M.L.C.—*Vice-Chairman*

The Honourable J. N. Roy, M.L.C.

Manufacturers' Representatives

Mr. L. Ramdin

Mr. J. Pilot

Planters' Representatives

Mr. M. Ramdin

Mr. P. N. A. Harel

Additional Appointed Members

Mr. M. Martin

Mr. M. Merven

The Committee held five meetings during the year.

C. Legislation

Ordinance No. 13 of 1958	...	To amend the importation of Plants (Diseases Prevention) Ordinance.
Ordinance No. 35 of 1958	...	To amend the Cyclone and Drought Insurance Fund Ordinance, 1957.
Ordinance No. 40 of 1958	...	To provide for the incorporation of the Sugar Planters' Rehabilitation Fund Committee established under the Sugar Industry Reserve Funds Ordinance, 1948.
Proclamation No. 4 of 1958	...	To proclaim the rate of the duty leviable under the Central Board (Costs of Administration) Ordinance, 1951 on the sugars of the 1957 Crop exported from the Colony.
Proclamation No. 11 of 1958	...	To amend proclamation No. 1 of 1949—Importation of Plants (Diseases Prevention) Ordinance.
Proclamation No. 12 of 1958	...	To authorise the use of large nets for fishing at specified places during the period extending from 1st October to the 31st January, 1958.
Proclamation No. 18 of 1958	...	To prohibit the exportation of Tomato plant to Rodrigues and the lesser dependencies of Mauritius.
Govt. Notice No. 12 of 1958	...	The Animal Diseases Ordinance
Govt. Notice No. 21 of 1958	...	The Animal Diseases Ordinance
Govt. Notice No. 39 of 1958	...	The Mauritius Industry Research Institute Ordinance, 1953.
Govt. Notice No. 40 of 1958	...	The Quarantine Ordinance, 1953
Govt. Notice No. 43 of 1958	...	The Quarantine Ordinance, 1953.
Govt. Notice No. 57 of 1958	...	The Tea Industry Control Ordinance, 1949.
Govt. Notice No. 58 of 1958	...	The Tea Industry Control Ordinance, 1949.
Govt. Notice No. 66 of 1958	...	The Animal Diseases Ordinance.
Govt. Notice No. 76 of 1958	...	The Cyclone and Drought Insurance Fund Ordinance, 1957.
Govt. Notice No. 77 of 1958	...	The Cyclone and Drought Insurance Fund Ordinance, 1957.

D. List of publications and contributions to Literature by Officers of the Department of Agriculture during 1958

Name of Author	Title of Paper	Name, Volume No. Page Nos. of periodical in which published
Andrews, D. N. ...	Fertilizer Requirements of Tea in Mauritius	Advisory Leaflet No. 2 Dept. of Agriculture, Mauritius
Anslow R. C. and Belcourt M.S.	Fodder Production from <i>Setaria sphacelata</i> in Mauritius	Revue Agricole et Sucrière de l'Île Maurice, Vol. 37, No. 2, pp 115—119.
do. ...	Fodder production from elephant grass in Mauritius	Rev. Agri. et Sucrière de l'Île Maurice, Vol. 37 No. 3 pp 132—142.
Moutia, L. A. ...	Contribution to the study of some phytophagous acarina and their predators in Mauritius	Bulletin of Entomological Research, Vol. 49, Part I, March, 1958.
Orian, A. J. E. ...	A synopsis of the cicadidae of Mauritius with a description of <i>Mauricia Claudeae</i> , Gen. et Sp. N.	Annals and Magazine of Natural History Ser. 12, Vol. VII, p. 223, March 1954.
do. ...	Hemiptera (Heteroptera and Homoptera excluding Sternorhyncha) of Mauritius.	Annals and Magazine of Natural History Ser. 12 Vol. IX, p. 641 September 1956.
do. ...	Saltatoria, Phasmida and Dictyoptera of Mauritius	Annals and Magazine of Natural History, Ser. 12 Vol. X, p. 513, July 1957.
Shuja, J. D. ...	Major Poultry Diseases of Economic Importance in Mauritius.	Advisory Leaflet No. 1 Dept. of Agriculture, Mauritius.
Smith, W. ...	Tyres on the farm	Advisory Leaflet No. 3 Dept. of Agriculture, Mauritius.
Webb, J. Lewis & Nadeau, F.	Recherches sur l'incidence de la spirocercose et de la dirofilariose, deux causes de mort subite du chien	Rev. Agri et Sucrière de l'Île Maurice, Vol. 37, No. 3 pp 159—162
	Dairy Cattle Census, 1956	Revue Agricole et Sucrière de l'Île Maurice, Vol. 37, No. 1 p. 44,

Balance Sheet of the Animal Feeding Stuff Department as at 30th June 1958

LIABILITIES			ASSETS		
	Rs	c		Rs	c
Accumulated profits ...	134,627	75	Stock of commodities :—		
add profit 1956-57 ...	53,877	04	Raw ...	189,469	99
	188,504	79	Manufactured ...	6,677	36
Accountant General (advance) ...	29,318	94		188,147	35
Creditors ...	33,511	18	Debtors ...		770 00
Salaries due (Staff) ...	16,574	00	Aloe bags ...		1,550 00
			Aloe thread ...		569 66
			Stores ...		3,626 05
			Molasses tank ...		800 00
			Safe ...		250 00
			Lorry ...	3,648	51
			less depreciation ...	729	70
				2,918	81
			Cubing and Pelleting		
			Machine ...	60,317	49
			less depreciation ...	3,015	87
				57,301	62
			Spectrophotometer...	9,250	33
			Net Loss c/l ...	2,725	09
TOTAL ...	267,908	91	TOTAL ...	267,908	91

RICHELIEU LIVESTOCK FEED FACTORY

Statement of Animal Feeding Stuffs processed during the year ended 30th June 1958

	Kilos	Kilos	
		In	Out
RECEIVING DEPARTMENT :—			
Stock on 1.7.57			
Poonac	1,370		
Molasses	72,837		
Fish Meal	15,270		
Salt	90		
Urea	1,959		
Bagassillo	34,373		
Lucerne	12,125		
Baled Bagasse	71,165		
Wheat Bran	70,985		
Bone Meal	4,025		
Cod Liver Oil	1,417		
Oats	12,950		
Dried Milk	1,925		
Meat Meal	8,730		
Wheaten Flour	9,960		
		319,181	
PURCHASES :—			
Poonac	114,775		
Bone Meal	6,030		
Molasses	216,700		
Bagassillo	73,690		
Salt	1,000		
Wheat Bran	180,530		
Oats	74,725		
Wheaten Flour	27,290		
Lucerne	29,490		
Fish Meal	28,755		
Dried Milk	2,000		
Cod Liver Oil	3,112		
Meat Meal	29,620		
		793,717	
Carried over ...	1,112,898		—

ANNUAL REPORT OF THE

	Kilos	Kilos	
		In	Out
<i>Brought forward</i> ...	—	1,112,892	—
TO MILLING DEPARTMENT :—			
Poonac ...	107,755		107,755
TO MIXING DEPARTMENT :—			
Molasses...	117,075		
Fish Meal ...	34,895		
Salt ...	794		
Urea ...	1,195		
Bagassillo ...	8,055		
Lucerne ...	39,485		
Baled Bagasse ...	14,540		
Wheat Bran ...	167,721		
Bone Meal ...	4,765		
Cod Liver Oil ...	4,140		
Oats ...	53,240		
Dried Milk ...	2,875		
Meat Meal ...	25,490		
Wheaten Flour ...	18,130		
			492,400
SALES :—			
Molasses ...	12,062		
Bone Meal ...	1,716		
Wheat Bran ...	420		
Oats ...	900		
Urea ...	2		
Meat Meal ...	44		
Fish Meal ...	44		
Lucerne ...	37½		
Salt ...	22		
			15,247½
RETURNED TO CONTRACTOR :—			
Bagassillo ...	21,250		21,250
STACK LOSS :—			
Poonac ...	700		
Bagassillo ...	29,013		
Molasses ...	3,103		
Oats ...	1,055		
Meat Meal ...	240		
Bone Meal ...	104		
Salt ...	3		
Lucerne ...	252½		
Wheat Bran ...	2,140		
Fish Meal ...	490		
Cod Liver Oil ...	2		
			37,102½
BALANCE OF STOCK ON 30.6.58 :—			
Poonac ...	7,690		
Molasses ...	157,297		
Fish Meal ...	8,596		
Salt ...	271		
Urea ...	762		
Bagassillo ...	49,745		
Lucerne ...	1,840		
Baled Bagasse ...	56,025		
Wheat Bran ...	87,234		
Bone Meal ...	3,470		
Cod Liver Oil ...	387		
Oats ...	32,480		
Dried Milk ...	1,050		
Meat Meal ...	12,576		
Wheaten Flour ...	19,120		
			439,143
TOTAL ...		1,112,898	1,112,898

DEPARTMENT OF AGRICULTURE

61

	Kilos	Kilos	
		In	Out
MILLING DEPARTMENT :—			
From Receiving Department.			
Poonac	107,755	107,755	
To FLOUR STORE :—			
Poonac Flour	105,905		
Industrial Loss	1,850		
			107,755
TOTAL		107,755	107,755
FLOUR STORE :—			
Stock on 1.7.57			
Poonac Flour	1,285		
From Milling Department ...	105,905		
		107,190	
To MIXING DEPARTMENT :—			
Poonac Flour	105,255		105,255
SALES :—			
Poonac Flour	1,497		1,497
STACK LOSS :—			
Poonac Flour	53		53
BALANCE OF STOCK ON 30.6.58			
Poonac Flour	385		385
TOTAL		107,190	107,190
MIXING DEPARTMENT :—			
From Receiving Department.			
Molasses	117,075		
Fish Meal	34,895		
Salt	794		
Urea	1,195		
Bagassillo	8,055		
Lucerne	39,485		
Baled Bagasse	14,540		
Wheat Bran	167,721		
Bone Meal	4,765		
Cod Liver Oil	4,140		
Oats	53,240		
Dried Milk	2,875		
Meat Meal	25,490		
Wheaten Flour	18,130		
		492,400	
FROM FLOUR STORE :—			
Poonac Flour	105,255	105,255	
FROM MAIZE DEPARTMENT :—			
Maize Rice	2,800		
Maize Flour	312,595		
		315,395	
FROM ANIMAL FEEDING STUFFS DEPARTMENT :—			
New Pig Feed (remixed)	100	100	
TO ANIMAL FEEDING STUFFS DEPARTMENT			
			913,150 (net)
TOTAL		913,150	913,150

	Kilos	Kilos	
		In	Out
ANIMAL FEEDING STUFFS			
DEPARTMENT :—			
Stock on 1.7.57			
Poultry Feed	950		
Special Maize Mixture			
(pig feed)	815		
Cow Feed	1,030		
Ureated Molasses	2,100		
Special Cow Feed	150		
Calf Feed... ..	400		
Chick Feed	695		
Horse Feed	335		
Bulls Feed	180		
New Pig Feed	490		
		7,145	
		(gross for net)	
ROSE HILL EXTENSION SHOP:—			
Poultry Feed	890		
Chick Feed	270		
Special Maize Mixture			
(pig feed)	400		
Cow Feed	200		
Ureated Molasses	150		
		1,910	
		(gross for net)	
FROM MIXING DEPARTMENT:—			
New Pig Feed	24,480		
Bulls Feed	9,180		
Horse Feed	24,225		
Poultry Feed	425,360		
Pig Feed	71,910		
Cow Feed	59,160		
Chick feed	58,650		
Ureated Molasses	54,060		
Special Cow Feed	168,045		
Calf Feed	29,070		
Special Horse Feed	6,273		
Mixture for Experiments	1,020		
		931,433	
		(gross for net)	
SALES :—			
Poultry Feed	420,175		
New Pig Feed	24,650		
Pig Feed	72,250		
Cow Feed	58,662		
Special Horse Feed	5,850		
Special Cow Feed	166,100		
Ureated Molasses	56,150		
Calf Feed	29,100		
Chick Feed	58,740		
Horse Feed	23,550		
Bulls Feed	9,000		
Mixture for Experiments	1,000		
		925,227	
		(gross for net)	
SENT TO MIXING :—			
New Pig Feed (remixed)	100		
		100	
		(gross for net)	
STACK LOSS :—			
Horse Feed	5		
New Pig Feed	220		
Cow Feed... ..	18		
Mixture for Experiment			
(damaged)	20		
		263	
		(gross for net)	
Carried over		940,488	925,590

DEPARTMENT OF AGRICULTURE

63

	Kilos	Kilos	
		In	Out
<i>Brought forward</i> ...		910,488	925,590
BALANCE OF STOCK ON 30.6.58 :—			
Poultry Feed	4,640		
Chick Feed	565		
Pig Feed	575		
Cow Feed	1,610		
Special Horse Feed	423		
Unreated Molasses	160		
Special Cow Feed	2,095		
Calf Feed	370		
Horse Feed	1,005		
Bulls Feed	360		
			11,803
ROSE HILL EXTENSION SHOP :—			(gross for net)
Poultry Feed	2,385		
Chick Feed	310		
Pig Feed	300		
Cow Feed	100		
			3,095
			(gross for net)
TOTAL		940,488	940,488

RICHELIEU LIVESTOCK FEED FACTORY

*Statement of Maize processed during the year
ended 30th June 1958*

	Kilos	Kilos	
		In	Out
RECEIVING DEPARTMENT:—			
<i>Dry Maize Store:—</i>			
Stock on 1.7.57	207,790		
Purchases	425,805		
		633,595	
To Milling Department... ..	384,330		
Stack Loss	6,805		
Balance of Stock on 30.6.58	242,460		
			633,595
		633,595	633,595
MILLING DEPARTMENT:—			
From Receiving Department	384,330		
		384,330	
TO GROUND MAIZE STORE:—			
Rice	9,000		
Flour	369,415		378,415
Industrial Loss	5,915		5,915
		384,330	384,330
GROUND MAIZE STORE:—			
Stock on 1.7.57 (Richelieu Factory)		50	400
(Rose Hill Extension Shop)		300	—
From Milling Department		9,000	369,415
		9,350	369,815
To Mixing Department (Animal Feeding Stuffs)		2,800	313,746
Sales		6,200	56,069
Balance of Stock on 30.6.58 (Richelieu Factory)		200	—
(Rose Hill Extension Shop)		150	—
		9,350	369,815

RICHELIEU YEAST FACTORY

Manufacturing a/c of the Yeast Factory for the year ended 30th June 1958

<i>Dr.</i>				<i>Cr.</i>			
To:		Rs.	cs.	By:		Rs.	cs.
Cost of Powder		12,359	30	Cost of production trans-			
Wages and cola		20,671	73	ferred to Trading a/c ...		35,216	18
Electricity		2,185	15				
TOTAL		35,216	18	TOTAL		35,216	18

Trading a/c as at 30th June 1958

To:		Rs.	cs.	By:		Rs.	cs.
Cost of production from				Sales to the Public ...		1,100	00
Manufacturing a/c ...		35,216	18	Sales to Government			
Stock of tablets on 1.7.57		9,016	50	Departments		75,335	00
Gross profit transferred to				Stock of tablets on 30.6.58		14,031	50
Profit and Loss a/c ...		46,233	82				
Total		90,466	50	TOTAL		90,466	50

Profit and Loss a/c as at 30th June 1958

To:		Rs.	cs.	By:		Rs.	cs.
Aggregate		414	00	Gross profit from Trading			
Trade test fees		10	00	a/c		46,233	82
Railway		15	14				
Telecommunications De-							
partment		19	20				
Crown Agents		3,610	61				
Stores		10,803	00				
Salaries							
of Staff		2,762	00				
Net profit		28,599	87				
		31,361	87				
TOTAL		46,233	82	TOTAL		46,233	82

F. Conversion Table

1 Arpent ...	...	...	...	...	...	1.043 acres
1 Gaulette	...	...	...	...	...	10.6 feet
1 Metric ton	...	...	...	...	...	1,000 kilos
1 Long ton	...	...	...	...	...	1,016 kilos
1 Kilo ...	...	...	...	...	...	1,000 grams
1 English pound ...	...	...	...	...	...	453.6 grams
1 Hundredweight	...	...	...	...	...	50.803 kilos
1 Cord ...	...	...	...	...	...	92.82 cubic feet
1 Gallon ...	...	...	...	...	...	4.546 litres
1 Rupee ...	...	...	...	...	...	1/6 sterling

